Drilling Program 1 of 6

#### Kerr-McGee Oil & Gas Onshore, L.P.

NBU 921-29B4CS

Surface: 1619 FNL / 2069 FEL SWNE BHL: 1227 FNL / 1809 FEL NWNE

Section 29 T9S R21E

Unitah County, Utah Mineral Lease: USA UTU 000581

#### **ONSHORE ORDER NO. 1**

#### **DRILLING PROGRAM**

#### 1. & 2.a <u>Estimated Tops of Important Geologic Markers</u>: <u>Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations</u>:

<u>Formation</u>	<u>Depth</u>	<u>Resource</u>
Uinta	0 - Surface	
Green River	1,572'	
Birds Nest	1,834'	Water
Mahogany	2,340'	Water
Wasatch	4,890'	Gas
Mesaverde	7,886'	Gas
Sego	10,123'	Gas
Castlegate	10,188'	Gas
Blackhawk	10,573'	Gas
TVD =	11,173'	
TD =	11,217'	

2.b Kerr McGee Oil & Gas Onshore LP (Kerr McGee) may elect to drill to (i) the Blackhawk formation (part of the Mesaverde Group), (ii) to a shallower depth within the Mesaverde Group, or (iii) to the Wasatch Formation. If Kerr McGee drills to the Blackhawk formation, please refer to Blackhawk as the bottom formation. The attached Blackhawk Drilling Program includes Total Vertical Depth, Total Depth, and appropriate casing and cement programs for the deeper formation.

If Kerr-McGee drills to a shallower depth in the Mesaverde Group or to the Wasatch Formation, please refer to the attached Wasatch/Mesaverde Drilling Program which includes Total Vertical Depth, Total Depth, and appropriate casing and cement programs for the shallower formations.

#### 3. Pressure Control Equipment

Please refer to the Standard Operating Practices on file with the BLM Vernal Field Office.

Drilling Program 2 of 6

#### 4. Proposed Casing & Cementing Program:

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

#### 5. <u>Drilling Fluids Program</u>:

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

#### 6. <u>Evaluation Program</u>:

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

#### 7. <u>Abnormal Conditions</u>:

#### 7.a Blackhawk (Part of Mesaverde Group)

Maximum anticipated bottom hole pressure calculated at 11173' TVD, approximately equals 7,151 psi (0.64 psi/ft = actual bottomhole gradient)

Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD

Maximum anticipated surface pressure equals approximately 4,677 psi (bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

Per Onshore Order No. 2 - Max Anticipated Surf. Press.(MASP) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient x TVD of next csg point))

#### 7.b Wasach Formation/Mesaverde Group

Maximum anticipated bottom hole pressure calculated at 10123' TVD, approximately equals 6,175 psi (0.61 psi/ft = actual bottomhole gradient)

Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD

Maximum anticipated surface pressure equals approximately 3,975 psi (bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

Per Onshore Order No. 2 - Max Anticipated Surf. Press.(MASP) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient x TVD of next csg point))

#### 8. <u>Anticipated Starting Dates:</u>

Drilling is planned to commence immediately upon approval of this application.

#### 9. <u>Variances:</u>

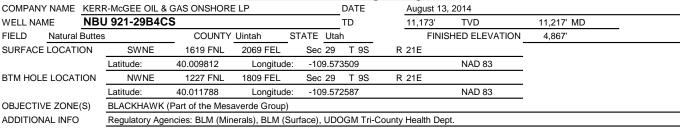
Please refer to the Standard Operating Practices on file with the BLM Vernal Field Office.

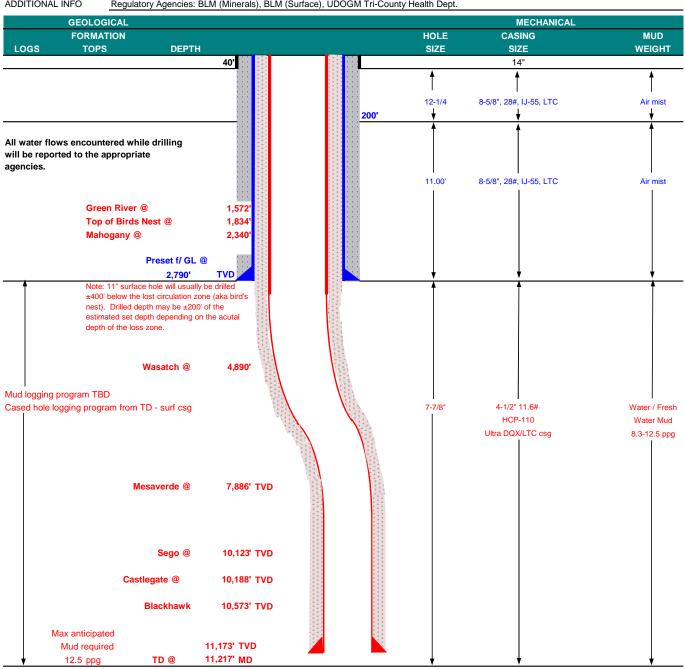
#### 10. Other Information:

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program



# KERR-McGEE OIL & GAS ONSHORE LP Blackhawk Drilling Program







# KERR-McGEE OIL & GAS ONSHORE LP <u>Blackhawk Drilling Program</u>

CASING PROGRAM	<u> </u>								DESIGN I	FACTORS	
_										LTC	DQX
	SIZE	INT	ERVA	L	WT.	GR.	CPLG.	BURST	COLLAPSE	TE	NSION
CONDUCTOR	14"	C	)-40'								
								3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0	to	2,790	28.00	IJ-55	LTC	1.93	1.44	5.09	N/A
								10,690	8,650	279,000	367,174
PRODUCTION	4-1/2"	0	to	5,000	11.60	HCP-110	DQX	1.19	1.19		3.49
	4-1/2"	5,000	to	11 217'	11 60	HCP-110	LTC	1 19	1 19	4 78	

Surface Casing:

(Burst Assumptions: TD = 12.5

0.73 psi/ft = frac gradient @ surface shoe

Fracture at surface shoe with 0.1 psi/ft gas gradient above

(Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

Production casing:

(Burst Assumptions: Pressure test with 8.4ppg @ (Collapse Assumption: Fully Evacuated Casing, Max MW)

(Collapse Assumption: Fully Evacuated Casing, Max MW)

000 psi) 0.64 psi/ft = bottomhole gradient

(Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

#### **CEMENT PROGRAM**

	FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE LEAD	500'	Premium cmt + 2% CaCl	180	60%	15.80	1.15
Option 1		+ 0.25 pps flocele				
TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	270	0%	15.80	1.15
		+ 2% CaCl + 0.25 pps flocele				
SURFACE		NOTE: If well will circulate water to	surface, opt	ion 2 will be	utilized	
Option 2 LEAD	2,290'	Premium cmt + 16% Gel + 10 pps gilsonite	280	35%	12.00	2.86
		+ 0.25 pps Flocele + 3% salt BWOC + GR 3 pps				
TAIL	500'	Premium cmt + 2% CaCl	150	35%	15.80	1.15
		+ 0.25 pps flocele				
TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION LEAD	4,387'	Premium Lite II +0.25 pps celloflake + .4% FL-52	340	35%	12.00	3.38
		+ .3% R-3 + .5 lbs/sk Kol-Seal + 6%Bentonite II +				
		1.2% Sodium Metasilicate + .05 lbs/sk Static Free				
TAIL	6,830'	50/50 Poz/G + 10% salt + .05 lbs/sk Static Free	1,610	35%	14.30	1.31
		+ 1.2% Sodium Metasilicate + .5 % EC-1				
		+.002 gps FP-6L + 2% Bentonite II				

<sup>\*</sup>Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

#### FLOAT EQUIPMENT & CENTRALIZERS

SURFACE

Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe

PRODUCTION

Float shoe, 1 jt, float collar. 15 centralizers for a Mesaverde and 20 for a Blackhawk well.

1 centralizer on the first 3 joints and one every third joint thereafter.

#### ADDITIONAL INFORMATION

Test casing head to 750 psi after installing. Test surface casing to 1,500 psi prior to drilling out.

BOPE: 11" 5M with one annular and 2 rams. The BOPE will be installed before the production hole is drilled and tested to 5,000 psi (annular to 2,500 psi) prior to drilling out the surface casing shoe. Record on chart recorder and tour sheet. Function test rams on each trip. Maintain safety valve and inside BOP on rig floor at all times. Most rigs have top drives; however, if used, the Kelly is to be equipped with upper and lower kelly valves.

|--|

Most rigs have PVT System for mud monitoring. If no PVT is available, visual monitoring will be utilized.

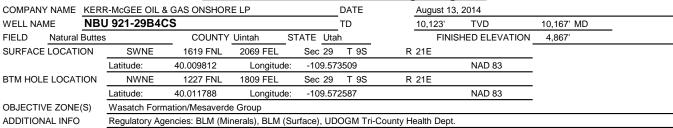
IF extreme mud losses are observed OR cement doesn't reach surface on a well on the pad, a DV Tool may be used. With Cement Baskets above and Below it

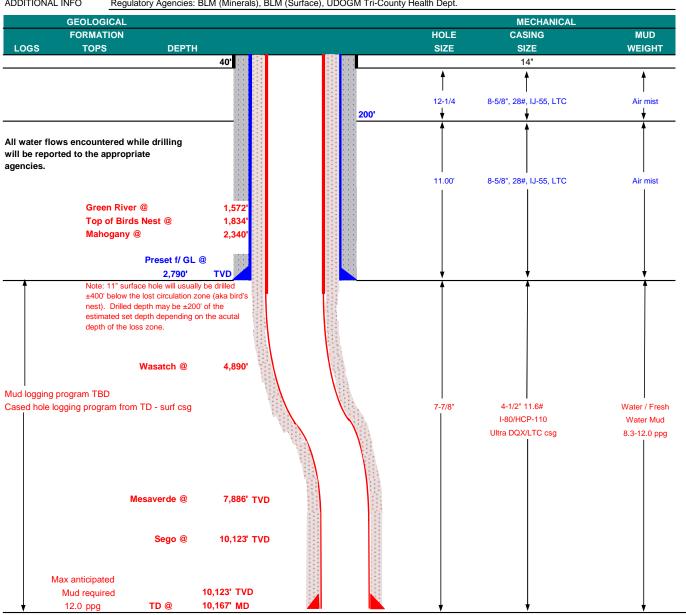
DRILLING	ENGINEER:		DATE:
		Matt Stiasny/Paul Wages	
DRILLING	SUPERINTENDENT:		DATE:
		Lovel Young	

<sup>\*</sup>Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained



# KERR-McGEE OIL & GAS ONSHORE LP Wasatch/Mesaverde Drilling Program







# KERR-McGEE OIL & GAS ONSHORE LP Wasatch/Mesaverde Drilling Program

# **CASING PROGRAM**

CONDUCTOR

**SURFACE PRODUCTION** 

<u>VI</u>								DESIGN	ACTURS	
									LTC	DQX
SIZE	INT	ERVA	L	WT.	GR.	CPLG.	BURST	COLLAPSE	TE	NSION
14"	C	-40'								
							3,390	1,880	348,000	N/A
8-5/8"	0	to	2,790	28.00	IJ-55	LTC	1.93	1.44	5.09	N/A
							7,780	6,350		267,035
4-1/2"	0	to	5,000	11.60	I-80	DQX	1.11	1.01		2.77
							10,690	8,650	223,000	
4-1/2"	5,000	to	10,167'	11.60	HCP-110	LTC	1.53	1.37	4.56	

**Surface Casing:** 

12.0 (Burst Assumptions: TD = ppg)

(Collapse Assumption: Fully Evacuated Casing, Max MW)

0.73 psi/ft = frac gradient @ surface shoe

Fracture at surface shoe with 0.1 psi/ft gas gradient above

(Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

Production casing:

(Burst Assumptions: Pressure test with 8.4ppg @ 7000 0.61 psi/ft = bottomhole gradient psi) (Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

#### **CEMENT PROGRAM**

	FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
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<sup>\*</sup>Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

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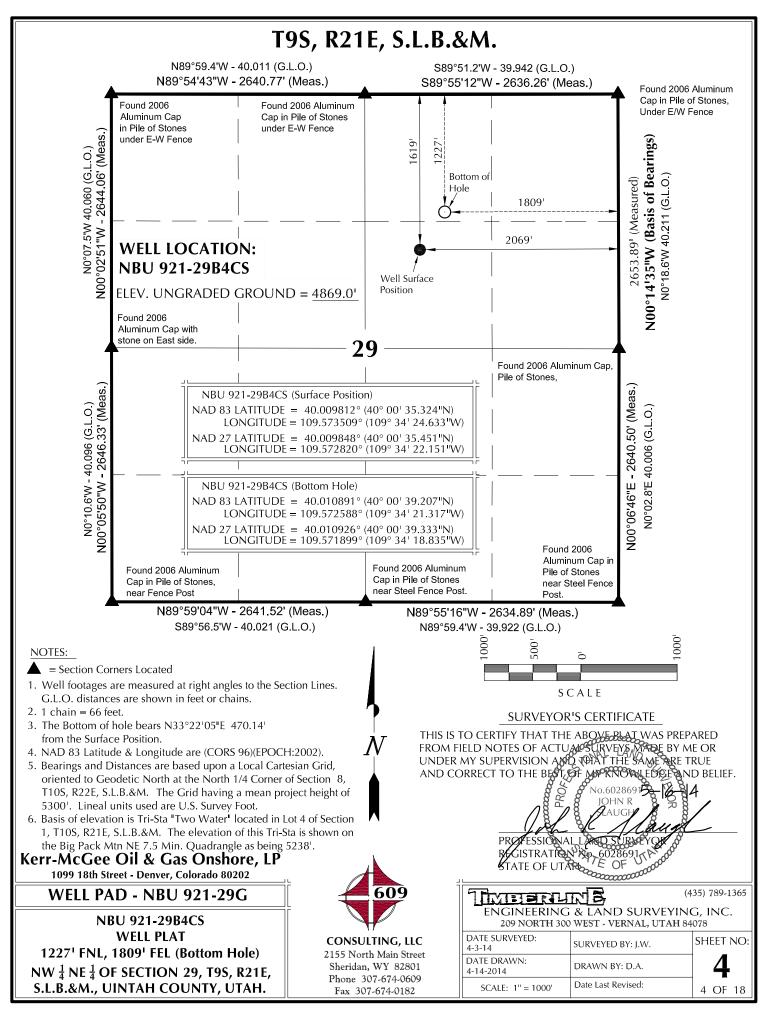
Surveys will be taken at 1,000' minimum intervals.

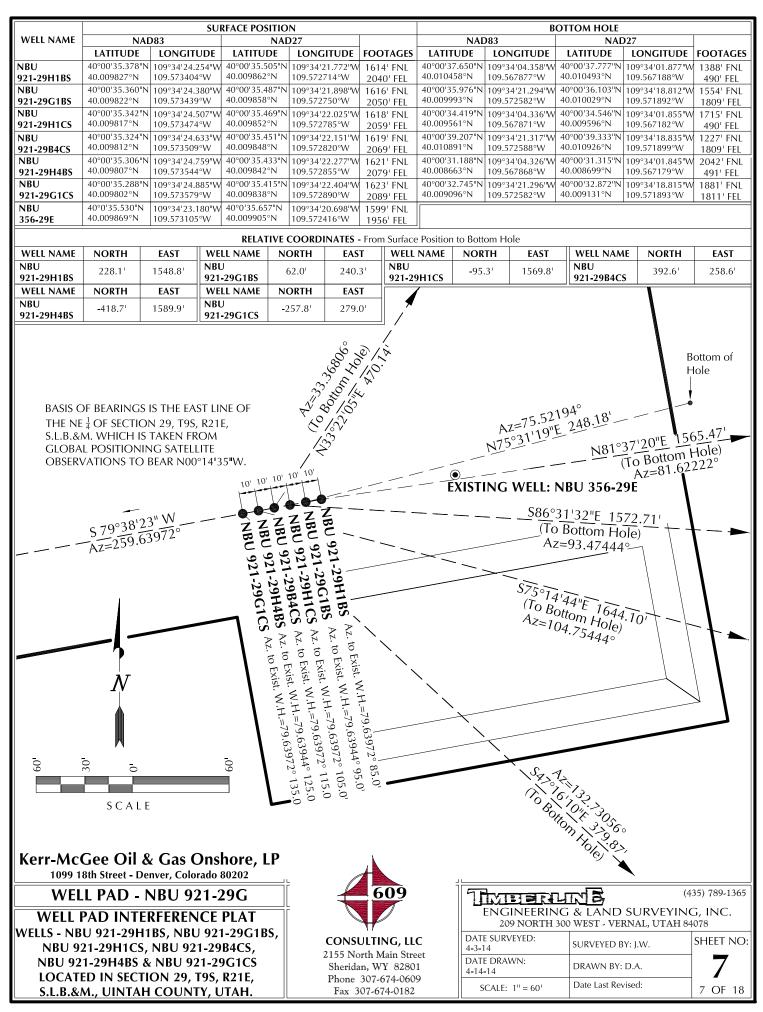
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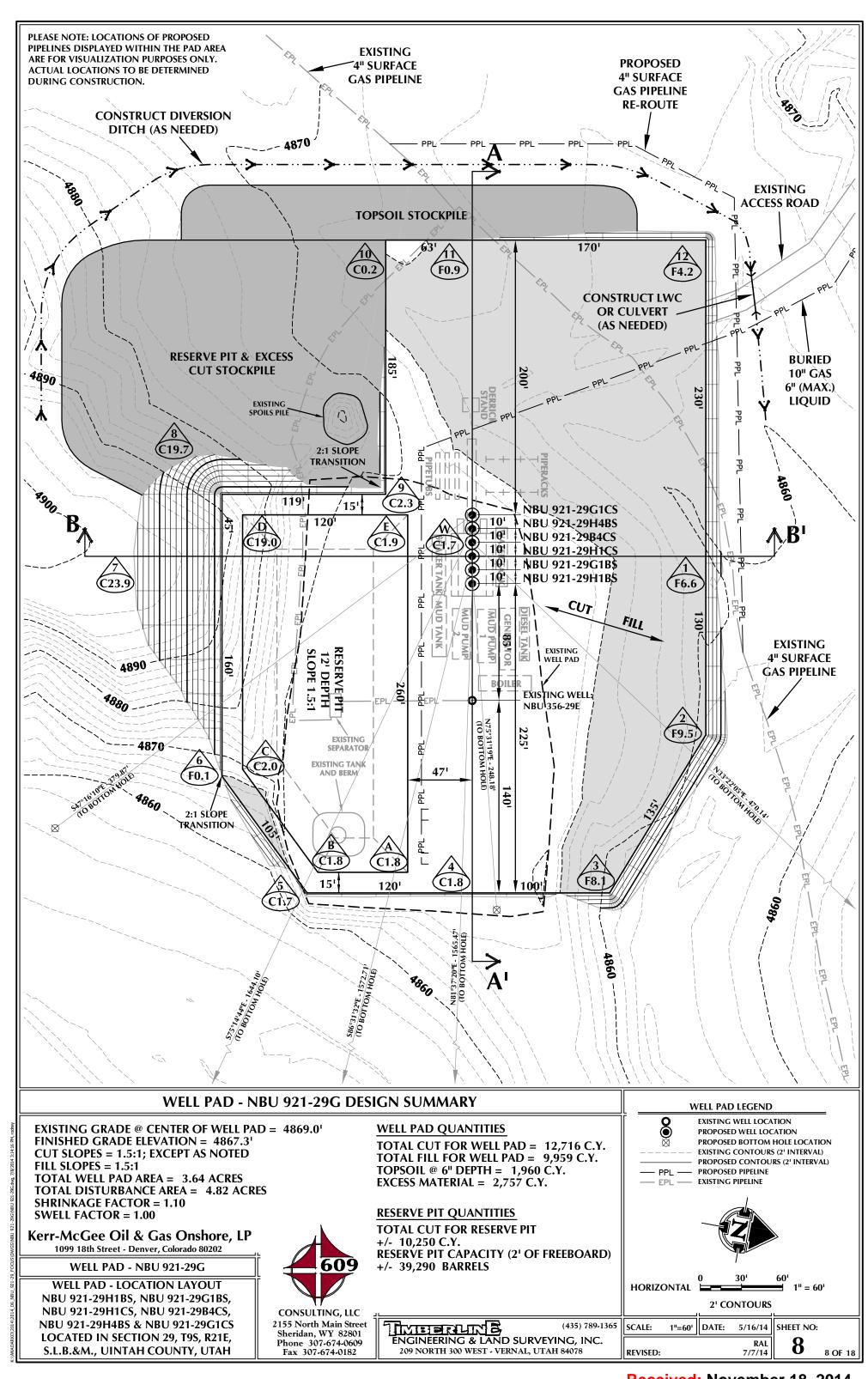
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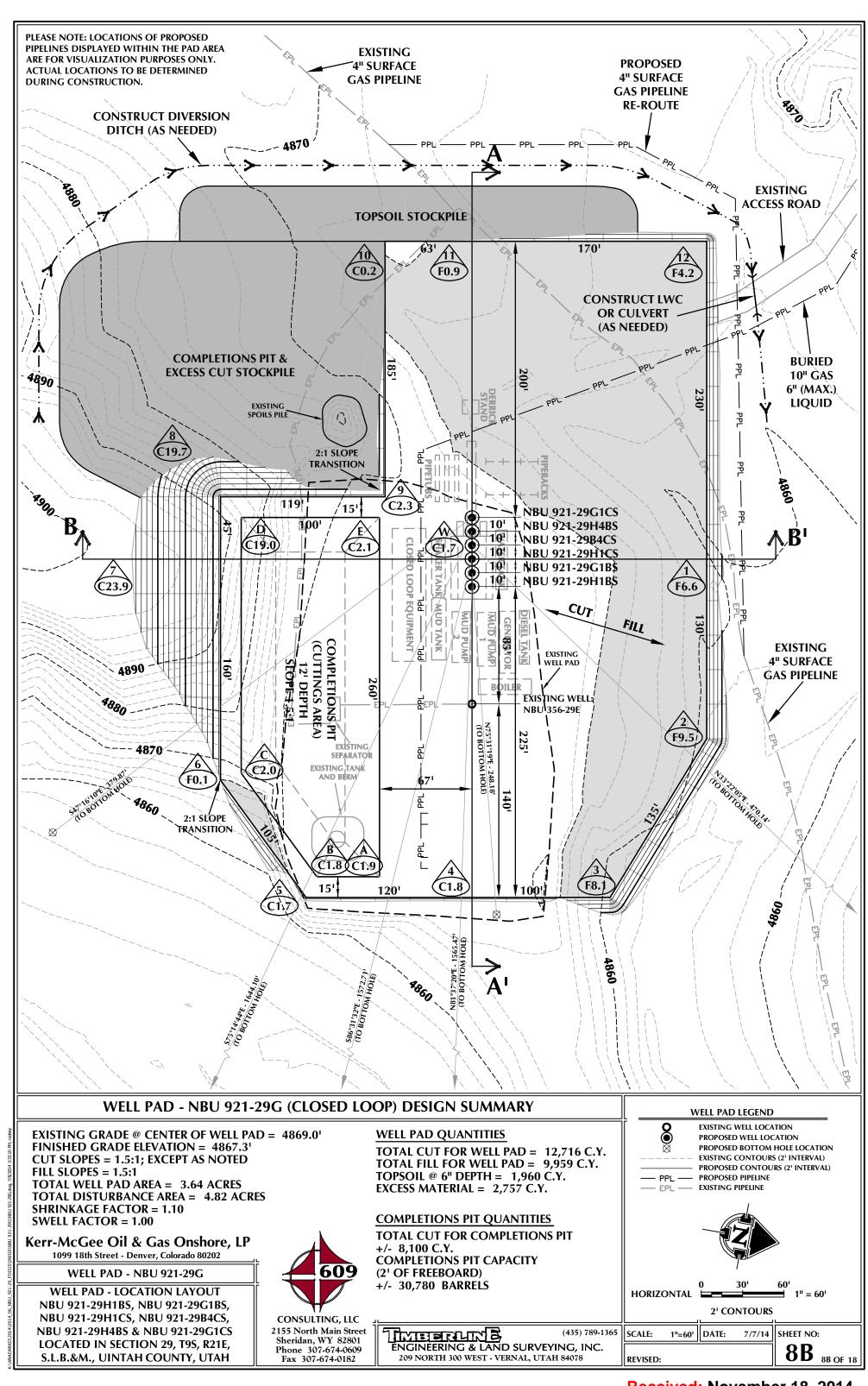
DRILLING ENGINEER:		DATE:
	Matt Stiasny/Paul Wages	
DRILLING SUPERINTENDENT:		DATE:
	Lovel Young	

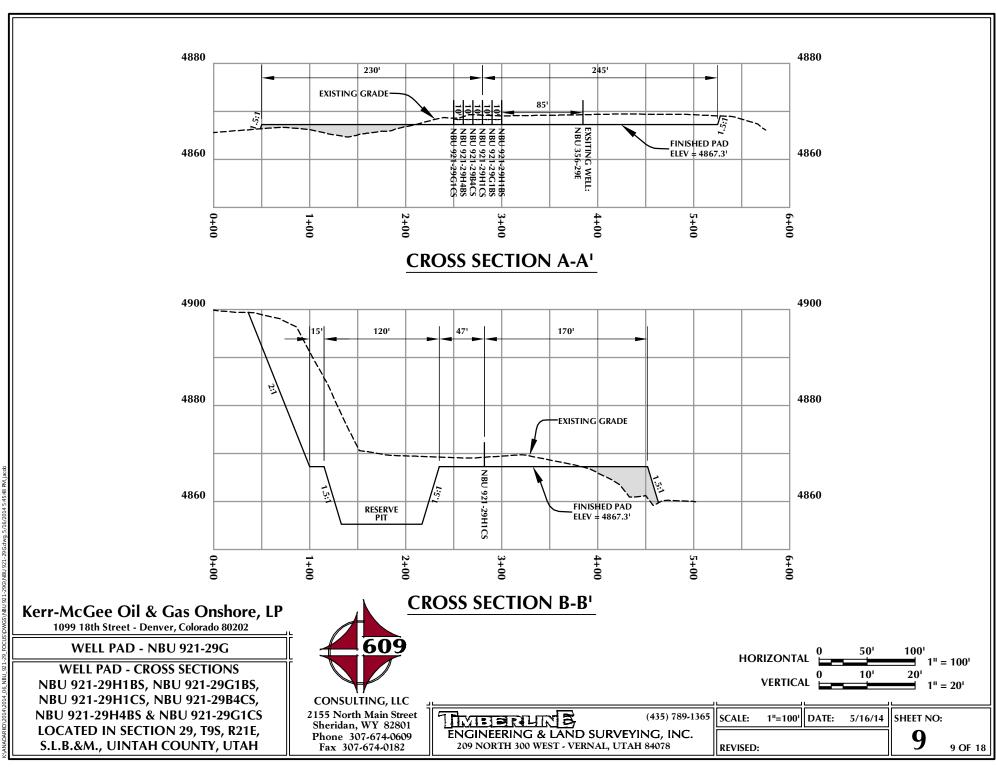
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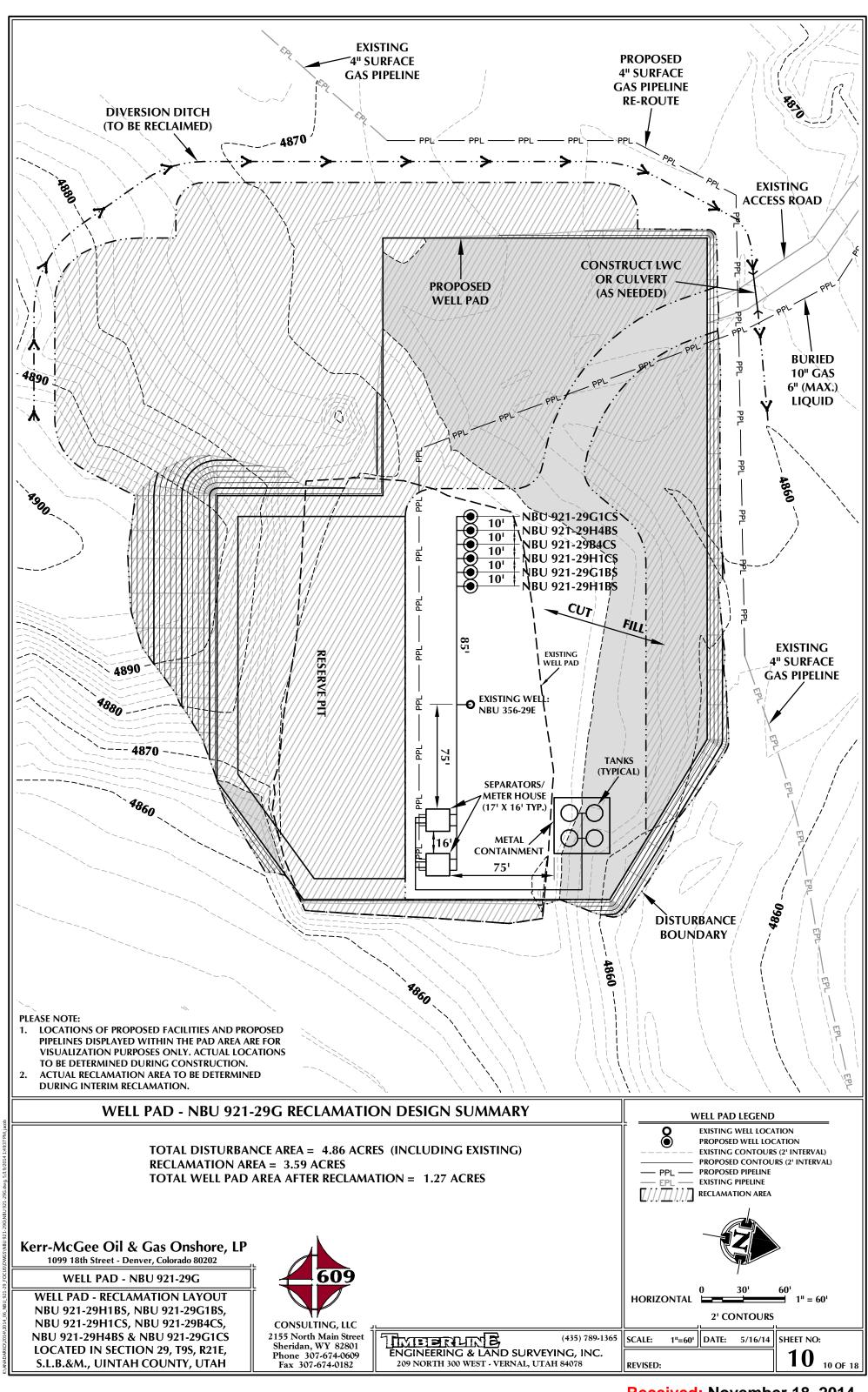












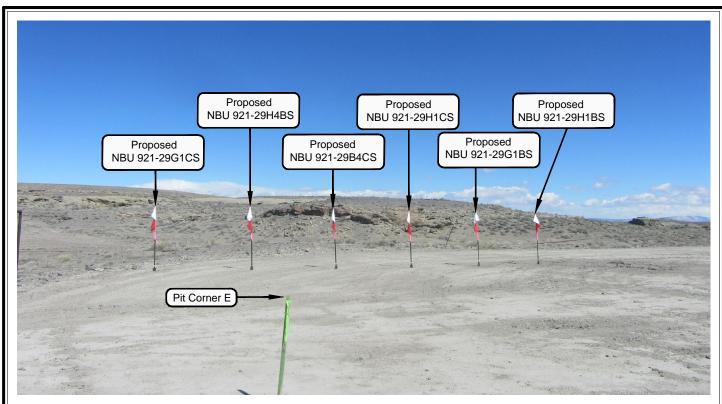


PHOTO VIEW: FROM CORNER PIT E TO LOCATION STAKE





PHOTO VIEW: FROM BEGINNING OF EXISTING ROAD

**CAMERA ANGLE: SOUTHEASTERLY** 

#### Kerr-McGee Oil & Gas Onshore, LP 1099 18th Street - Denver, Colorado 80202

#### WELL PAD - NBU 921-29G

**LOCATION PHOTOS** NBU 921-29H1BS, NBU 921-29G1BS, NBU 921-29H1CS, NBU 921-29B4CS, NBU 921-29H4BS & NBU 921-29G1CS LOCATED IN SECTION 29, T9S, R21E, S.L.B.&M., UINTAH COUNTY, UTAH.



CONSULTING, LLC 2155 North Main Street Sheridan, WY 82801 Phone 307-674-0609 Fax 307-674-0182

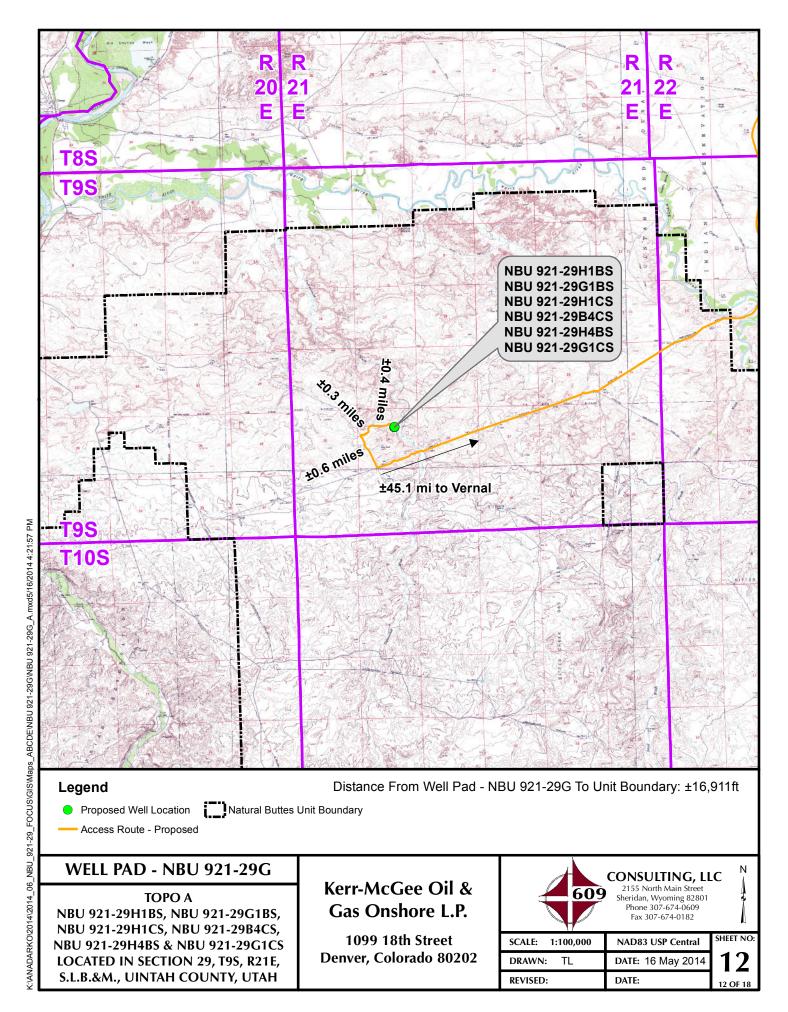
TMERRING
ENGINEERING & LAN
209 NORTH 300 WEST - V

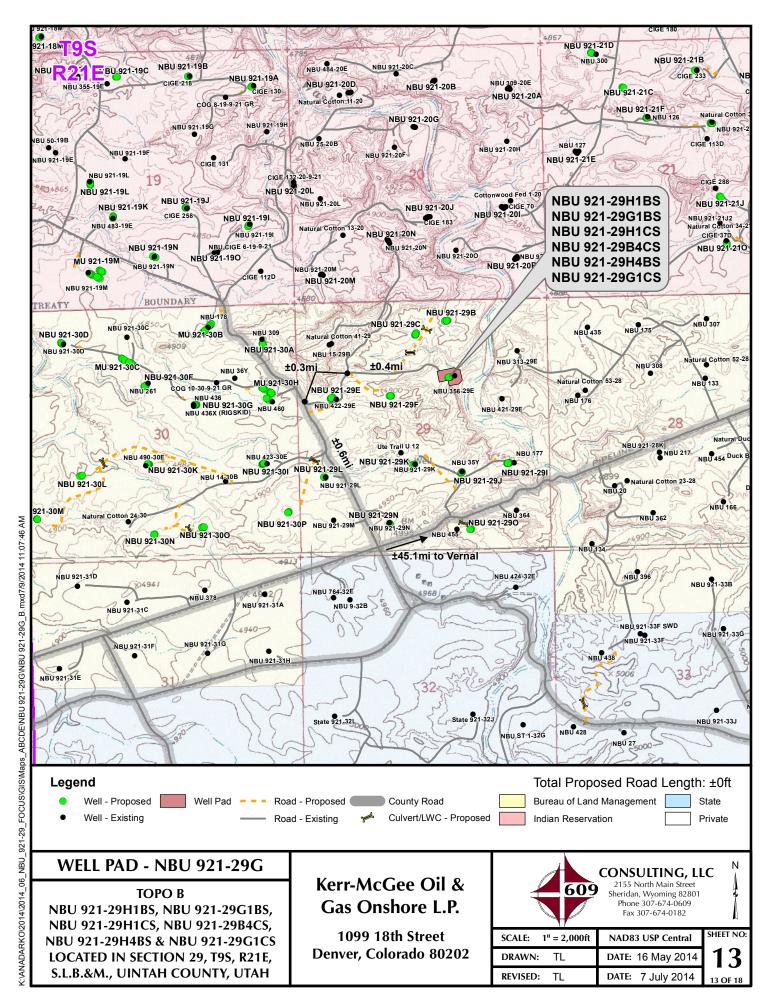
(435) 789-1365

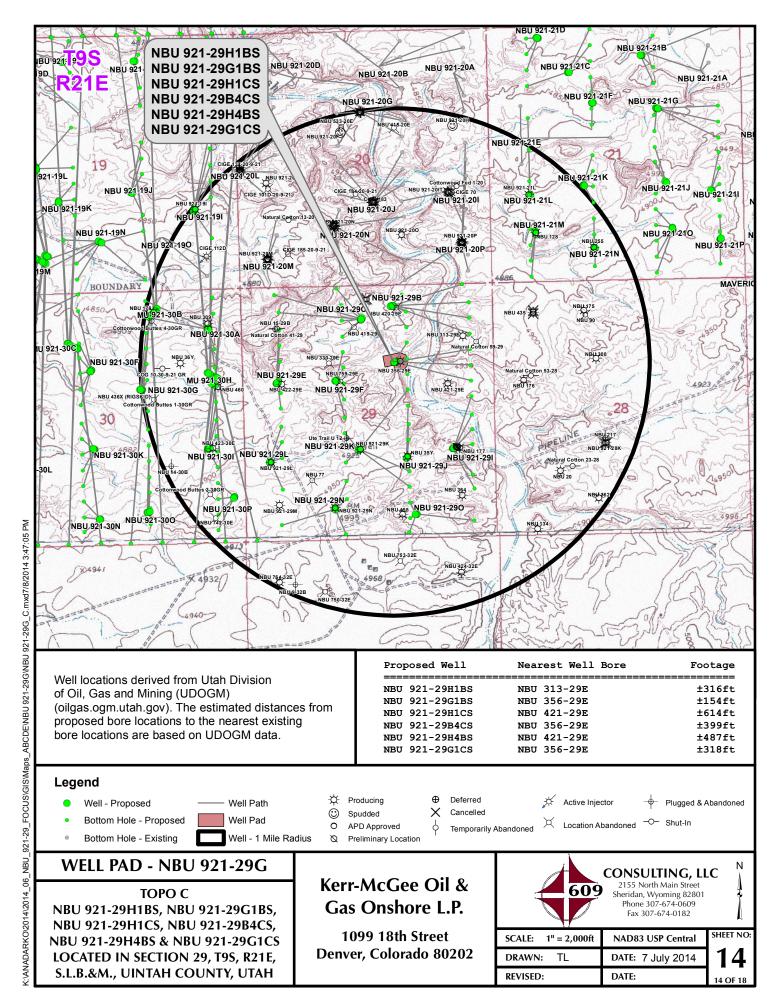
ND SURVEYING, INC. VERNAL, UTAH 84078

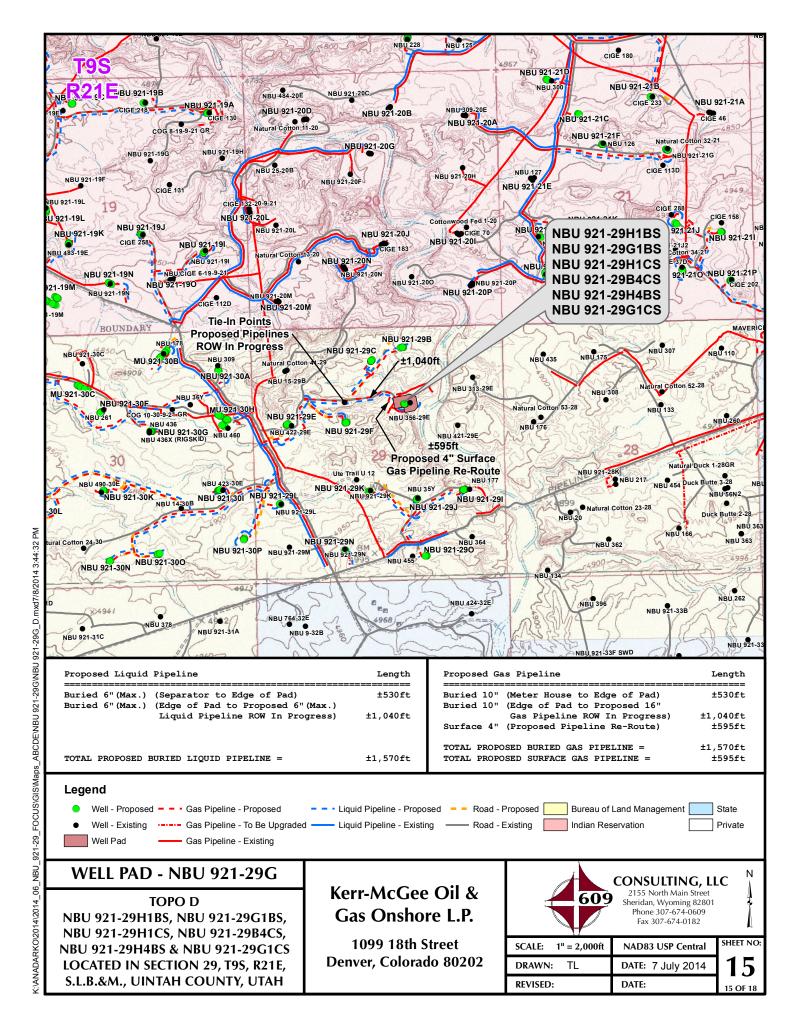
DATE PHOTOS TAKEN: SHEET NO: PHOTOS TAKEN BY: J.W. 4-3-14 DATE DRAWN: DRAWN BY: D.A. 4-14-2014 Date Last Revised:

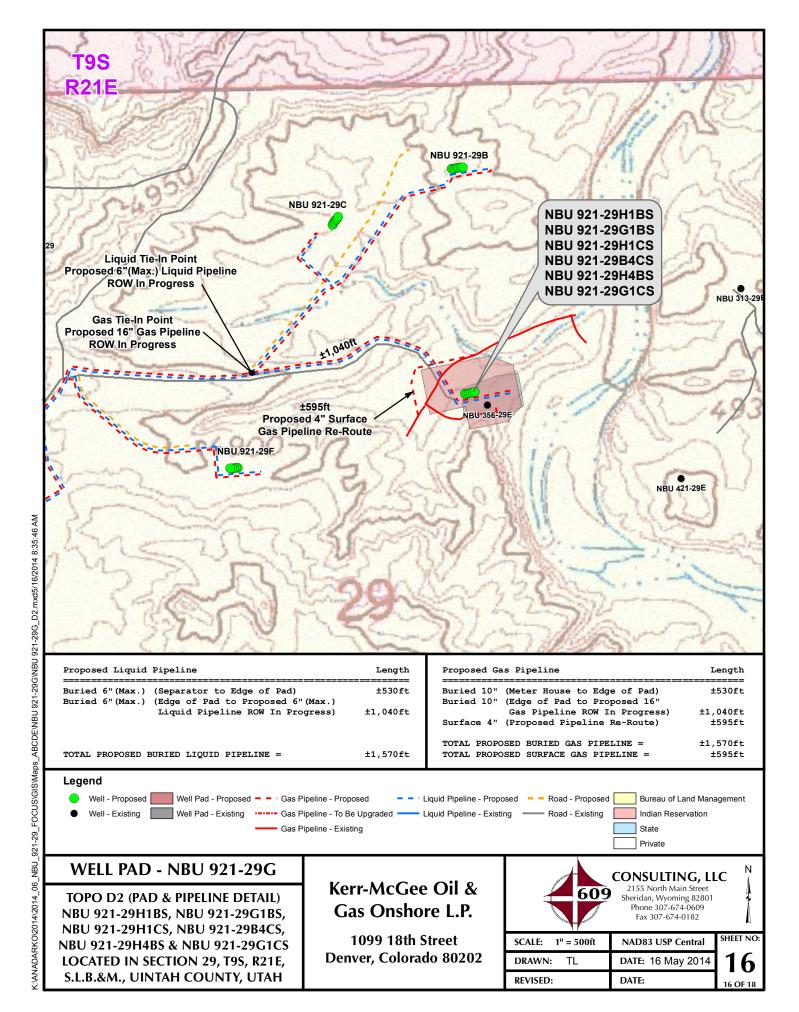
11 OF 18



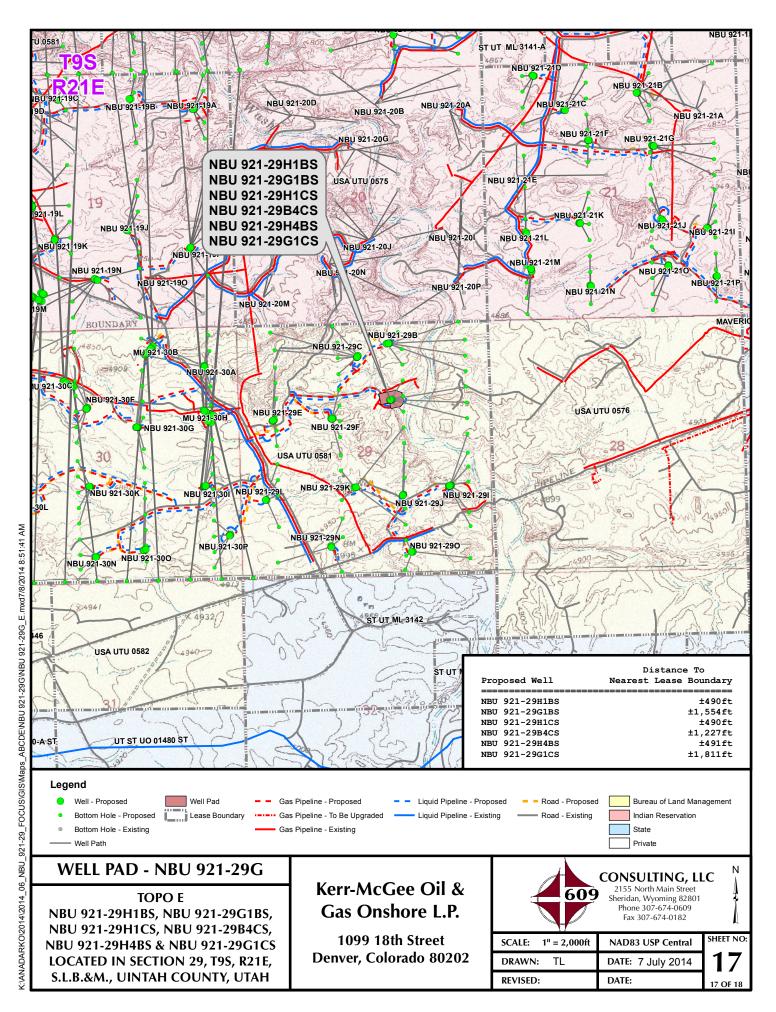








Received: November 18, 2014



Kerr-McGee Oil & Gas Onshore, LP WELL PAD - NBU 921-29G WELLS – NBU 921-29H1BS, NBU 921-29G1BS, NBU 921-29H1CS, NBU 921-29B4CS NBU 921-29H4BS & NBU 921-29G1CS SECTION 29, T9S, R21E, S.L.B.&M. UINTAH COUNTY, UTAH

From the intersection of U.S. Highway 40 and 500 East Street in Vernal, Utah, proceed in an easterly, then southerly direction along U.S. Highway 40 approximately 3.3 miles to the junction of State Highway 45. Exit right and proceed in a southerly direction along State Highway 45 approximately 20.2 miles to the junction of the Glen Bench Road (County B Road 3260). Exit right and proceed in a southwesterly direction along the Glen Bench Road approximately 17.7 miles to a Class D County Road to the southwest. Exit right and proceed in a southwesterly direction along the Class D County Road approximately 3.9 miles to a second Class D County Road to the northwest. Exit right and proceed in a northwesterly direction along the second Class D County Road approximately 0.6 miles to a service road to the east. Exit right and proceed in an easterly, then northerly direction along the service road approximately 0.3 miles to a service road to the east. Exit right and proceed in an easterly direction along the service road approximately 0.4 miles to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 46.4 miles in a southerly direction.

**SHEET 18 OF 18** 

Received: November 18, 2014



Project: UTAH - UTM (feet), NAD27, Zone 12N

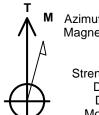
Site: NBU 921-29G PAD Well: NBU 921-29B4CS

Wellbore: OH

Design: PLAN #1 PRELIMINARY

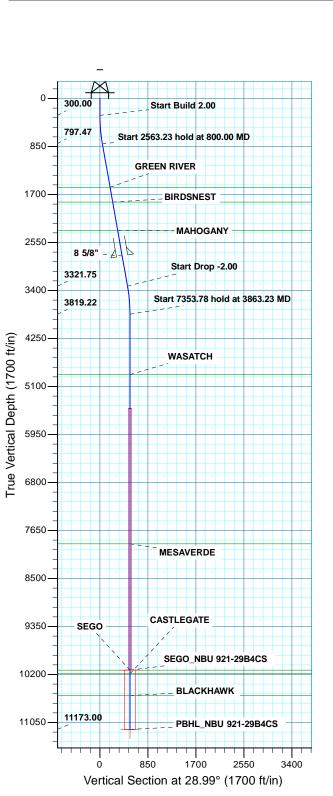


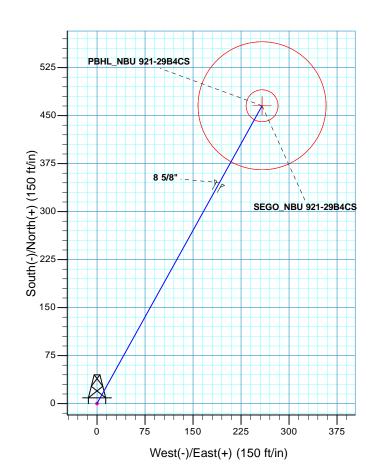
WELL DETAILS: NBU 921-29B4CS										
GL 4867 & 4 @ 4871.00ft (ASSUMED)										
	+N/-S +E/-W Northing Easting Latittude Longitude 0.00 0.00 14532757.94 2040061.28 40.0096480 -109.5728200									
				С	ESIGN TARGET	DETAILS				
Name	TVD	+N/-S	+E/-W	Nort	thing	Easting	Latitude	Longitude	Shape	
SEGO	10123.00 - plan hits target	465.45 center	257.94	1453322	27.46	2040311.73	40.0109260	-109.5718990	Circle (Radius: 25.0	
PBHL	11173.00 - plan hits target	465.45	257.94	1453322	27.46	2040311.73	40.0109260	-109.5718990	Circle (Radius: 100.00	



Azimuths to True North Magnetic North: 10.83°

> Magnetic Field Strength: 51909.1snT Dip Angle: 65.78° Date: 07/24/2014 Model: BGGM2014





				SECTIO	N DETAILS				
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
800.00	10.00	28.99	797.47	38.07	21.10	2.00	28.99	43.52	
3363.23	10.00	28.99	3321.75		236.84	0.00	0.00	488.62	
3863.23	0.00	0.00	3819.22	465.45	257.94	2.00	180.00	532.14	
11217.01	0.00	0.00	11173.00	465.45	257.94	0.00	0.00	532.14	PBHL_NBU 921-298
PROJECT DETAILS	· UTAH -	UTM (fee	et). NAD27.	Zone 12N	I TVDPat	h	MDF	Path	Formation
					1572.0 1834.0	0	1586 1852	6.48	GREEN RIVER BIRDSNEST
	ersal Tran	nsverse I	Mercator (U		1834.0 2340.0	0 0 0	1586 1852 2366	6.48 2.52 6.33	GREEN RIVER BIRDSNEST MAHOGANY
eodetic System: Univ Datum: NAD Ellipsoid: Clark	ersal Tran 1927 (NA ke 1866	nsverse I	Mercator (U CONUS)		1834.0 2340.0 4890.0	0 0 0 0	1586 1852 2366 4934	6.48 2.52 6.33 4.01	GREEN RIVER BIRDSNEST MAHOGANY WASATCH
odetic System: Univ Datum: NAD Ellipsoid: Clark Zone: Zone	ersal Tran 1927 (NA ke 1866 12N (114	nsverse I DCON C	Mercator (UCONUS)		1834.0 2340.0 4890.0 7886.0	0 0 0 0 0	1586 1852 2366 4934 7930	5.48 2.52 6.33 4.01 0.01	GREEN RIVER BIRDSNEST MAHOGANY WASATCH MESAVERDE
eodetic System: Univ Datum: NAD Ellipsoid: Clark Zone: Zone Location: SEC	ersal Tran 1927 (NA ke 1866 12N (114 TION 27 T	nsverse I DCON C W to 10	Mercator (UCONUS)		1834.0 2340.0 4890.0 7886.0 10123.0	0 0 0 0 0 0	1586 1852 2366 4934 7930 10167	6.48 2.52 6.33 4.01 0.01 7.01	GREEN RIVER BIRDSNEST MAHOGANY WASATCH MESAVERDE SEGO
eodetic System: Univ Datum: NAD Ellipsoid: Clark Zone: Zone	ersal Tran 1927 (NA ke 1866 12N (114 TION 27 T	nsverse I DCON C W to 10	Mercator (UCONUS)		1834.0 2340.0 4890.0 7886.0 10123.0 10188.0	0 0 0 0 0 0 0	1586 1852 2366 4934 7930 10167 10232	5.48 2.52 6.33 4.01 0.01 7.01 2.01	GREEN RIVER BIRDSNEST MAHOGANY WASATCH MESAVERDE SEGO CASTLEGATE
eodetic System: Univ Datum: NAD Ellipsoid: Clark Zone: Zone Location: SEC	ersal Tran 1927 (NA ke 1866 12N (114 TION 27 T	nsverse I DCON C W to 10	Mercator (UCONUS)		1834.0 2340.0 4890.0 7886.0 10123.0	0 0 0 0 0 0 0	1586 1852 2366 4934 7930 10167	5.48 2.52 6.33 4.01 0.01 7.01 2.01	GREEN RIVER BIRDSNEST MAHOGANY WASATCH MESAVERDE SEGO
eodetic System: Univ Datum: NAD Ellipsoid: Clark Zone: Zone Location: SEC	ersal Tran 1927 (NA ke 1866 12N (114 TION 27 T	nsverse I DCON C W to 10	Mercator (UCONUS)	JS Survey Feet	1834.0 2340.0 4890.0 7886.0 10123.0 10188.0	0 0 0 0 0 0 0	1586 1852 2366 4934 7930 10167 10232	5.48 2.52 6.33 4.01 0.01 7.01 2.01	GREEN RIVER BIRDSNEST MAHOGANY WASATCH MESAVERDE SEGO CASTLEGATE
eodetic System: Univ Datum: NAD Ellipsoid: Clark Zone: Zone Location: SEC	ersal Tran 1927 (NA ke 1866 12N (114 TION 27 T	nsverse I DCON C W to 10	Mercator (UCONUS)	JS Survey Feet	1834.0 2340.0 4890.0 7886.0 10123.0 10188.0 10573.0	0 0 0 0 0 0 0 0	1586 1852 2366 4934 7930 10167 10232	5.48 2.52 6.33 4.01 0.01 7.01 2.01 7.01	GREEN RIVER BIRDSNEST MAHOGANY WASATCH MESAVERDE SEGO CASTLEGATE



# **US ROCKIES REGION PLANNING**

UTAH - UTM (feet), NAD27, Zone 12N NBU 921-29G PAD NBU 921-29B4CS

OH

Plan: PLAN #1 PRELIMINARY

# **Standard Planning Report**

25 July, 2014



Received: November 18, 2014





**Database:** EDM 5000.1 Single User Db

Company: US ROCKIES REGION PLANNING
Project: UTAH - UTM (feet), NAD27, Zone 12N

 Site:
 NBU 921-29G PAD

 Well:
 NBU 921-29B4CS

Wellbore: OH

Design: PLAN #1 PRELIMINARY

Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:

Survey Calculation Method:

Well NBU 921-29B4CS

GL 4867 & 4 @ 4871.00ft (ASSUMED) GL 4867 & 4 @ 4871.00ft (ASSUMED)

True

Minimum Curvature

Project UTAH - UTM (feet), NAD27, Zone 12N

Map System: Universal Transverse Mercator (US Survey Feet)

Geo Datum: NAD 1927 (NADCON CONUS)

Map Zone: Zone 12N (114 W to 108 W)

Mean Sea Level

Site NBU 921-29G PAD, SECTION 27 T9S R21E

Northing: 14,532,757.94 usft Site Position: Latitude: 40.0096480 From: Lat/Long Easting: 2,040,061.27 usft Longitude: -109.5728200 **Position Uncertainty:** 0.00 ft Slot Radius: **Grid Convergence:** 0.92 13.200 in

System Datum:

Well NBU 921-29B4CS, 1619 FNL 2069 FEL

 Well Position
 +N/-S
 0.00 ft
 Northing:
 14,532,757.94 usft
 Latitude:
 40.0096480

 +E/-W
 0.00 ft
 Easting:
 2,040,061.27 usft
 Longitude:
 -109.5728200

Position Uncertainty 0.00 ft Wellhead Elevation: 0.00 ft Ground Level: 4,867.00 ft

Wellbore ОН Magnetics **Model Name** Sample Date Declination **Dip Angle** Field Strength (nT) (°) (°) BGGM2014 07/24/14 10.83 65.78 51,909

Design	PLAN #1 PRELIMINARY				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	28.99	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	10.00	28.99	797.47	38.07	21.10	2.00	2.00	0.00	28.99	
3,363.23	10.00	28.99	3,321.75	427.38	236.84	0.00	0.00	0.00	0.00	
3,863.23	0.00	0.00	3,819.22	465.45	257.94	2.00	-2.00	0.00	180.00	
11,217.01	0.00	0.00	11,173.00	465.45	257.94	0.00	0.00	0.00	0.00	PBHL_NBU 921-29B





Database: EDM 5000.1 Single User Db
Company: US ROCKIES REGION PLANNING

UTAH - UTM (feet), NAD27, Zone 12N

 Site:
 NBU 921-29G PAD

 Well:
 NBU 921-29B4CS

Wellbore: OH

Project:

Design: PLAN #1 PRELIMINARY

Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:

**Survey Calculation Method:** 

Well NBU 921-29B4CS

GL 4867 & 4 @ 4871.00ft (ASSUMED) GL 4867 & 4 @ 4871.00ft (ASSUMED)

True

Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth (ft)	Inclination (°)	Azimuth (°)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Section (ft)	Rate (°/100ft)	Rate (°/100ft)	Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2									
400.00	2.00	28.99	399.98	1.53	0.85	1.75	2.00	2.00	0.00
500.00	4.00	28.99	499.84	6.10	3.38	6.98	2.00	2.00	0.00
600.00	6.00	28.99	599.45	13.73	7.61	15.69	2.00	2.00	0.00
700.00	8.00	28.99	698.70	24.39	13.51	27.88	2.00	2.00	0.00
800.00	10.00	28.99	797.47	38.07	21.10	43.52	2.00	2.00	0.00
Start 2563.23	3 hold at 800.00	MD							
900.00	10.00	28.99	895.95	53.26	29.51	60.89	0.00	0.00	0.00
1,000.00	10.00	28.99	994.43	68.44	37.93	78.25	0.00	0.00	0.00
1,100.00	10.00	28.99	1,092.91	83.63	46.35	95.62	0.00	0.00	0.00
1,200.00	10.00	28.99	1,191.39	98.82	54.76	112.98	0.00	0.00	0.00
1,300.00	10.00	28.99	1,289.87	114.01	63.18	130.35	0.00	0.00	0.00
1,400.00	10.00	28.99	1,388.35	129.20	71.60	147.71	0.00	0.00	0.00
1,500.00	10.00	28.99	1,486.83	144.39	80.02	165.08	0.00	0.00	0.00
1,586.48	10.00	28.99	1,572.00	157.52	87.29	180.09	0.00	0.00	0.00
GREEN RIVE		20.00	1,072.00	107.02	07.20	100.00	0.00	0.00	0.00
1,600.00	10.00	28.99	1,585.31	159.58	88.43	182.44	0.00	0.00	0.00
1,700.00	10.00	28.99	1,683.79	174.76	96.85	199.81	0.00	0.00	0.00
1,800.00	10.00	28.99	1,782.27	189.95	105.27	217.17	0.00	0.00	0.00
1,852.52	10.00	28.99	1,834.00	197.93	109.69	226.29	0.00	0.00	0.00
BIRDSNEST	10.00	00.00	4 000 75	005.44	110.00	004.54	0.00	0.00	0.00
1,900.00	10.00	28.99	1,880.75	205.14	113.68	234.54	0.00	0.00	0.00
2,000.00	10.00	28.99	1,979.23	220.33	122.10	251.90	0.00	0.00	0.00
2,100.00	10.00 10.00	28.99	2,077.72 2,176.20	235.52 250.71	130.52 138.93	269.27 286.63	0.00 0.00	0.00 0.00	0.00 0.00
2,200.00		28.99	2,170.20	250.71	130.93				
2,300.00	10.00	28.99	2,274.68	265.90	147.35	303.99	0.00	0.00	0.00
2,366.33	10.00	28.99	2,340.00	275.97	152.94	315.51	0.00	0.00	0.00
MAHOGANY									
2,400.00	10.00	28.99	2,373.16	281.08	155.77	321.36	0.00	0.00	0.00
2,500.00	10.00	28.99	2,471.64	296.27	164.19	338.72	0.00	0.00	0.00
2,600.00	10.00	28.99	2,570.12	311.46	172.60	356.09	0.00	0.00	0.00
2,700.00	10.00	28.99	2,668.60	326.65	181.02	373.45	0.00	0.00	0.00
2,800.00	10.00	28.99	2,767.08	341.84	189.44	390.82	0.00	0.00	0.00
2,823.27	10.00	28.99	2,790.00	345.37	191.40	394.86	0.00	0.00	0.00
8 5/8"									
2,900.00	10.00	28.99	2,865.56	357.03	197.85	408.18	0.00	0.00	0.00
3,000.00	10.00	28.99	2,964.04	372.21	206.27	425.55	0.00	0.00	0.00
3,100.00	10.00	28.99	3,062.52	387.40	214.69	442.91	0.00	0.00	0.00
3,200.00	10.00	28.99	3,161.00	402.59	223.11	460.28	0.00	0.00	0.00
3,300.00	10.00	28.99	3,259.48	417.78	231.52	477.64	0.00	0.00	0.00
3,363.23	10.00	28.99	3,321.75	427.38	236.84	488.62	0.00	0.00	0.00
Start Drop -2									
3,400.00	9.26	28.99	3,358.01	432.77	239.83	494.78	2.00	-2.00	0.00
3,500.00	7.26	28.99	3,456.96	445.34	246.79	509.15	2.00	-2.00	0.00
3,600.00	5.26	28.99	3,556.36	454.88	252.08	520.06	2.00	-2.00	0.00
3,700.00	3.26	28.99	3,656.08	461.39	255.69	527.50	2.00	-2.00	0.00
3,800.00	1.26	28.99	3,755.99	464.84	257.60	531.45	2.00	-2.00	0.00
3,863.23	0.00	0.00	3,819.22	465.45	257.94	532.14	2.00	-2.00	0.00





Database: EDM 5000.1 Single User Db
Company: US ROCKIES REGION PLANNING
Project: UTAH - UTM (feet), NAD27, Zone 12N

 Site:
 NBU 921-29G PAD

 Well:
 NBU 921-29B4CS

Wellbore: OH

Design: PLAN #1 PRELIMINARY

Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:

**Survey Calculation Method:** 

Well NBU 921-29B4CS

GL 4867 & 4 @ 4871.00ft (ASSUMED) GL 4867 & 4 @ 4871.00ft (ASSUMED)

True

anned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,900.00	0.00	0.00	3,855.99	465.45	257.94	532.14	0.00	0.00	0.00
4,000.00	0.00	0.00	3,955.99	465.45	257.94	532.14	0.00	0.00	0.00
4,100.00	0.00	0.00	4,055.99	465.45	257.94	532.14	0.00	0.00	0.00
4,200.00	0.00	0.00	4,155.99	465.45	257.94	532.14	0.00	0.00	0.00
4,300.00	0.00	0.00	4,255.99	465.45	257.94	532.14	0.00	0.00	0.00
4,400.00	0.00	0.00	4,355.99	465.45	257.94	532.14	0.00	0.00	0.00
4,500.00	0.00	0.00	4,455.99	465.45	257.94	532.14	0.00	0.00	0.00
4,600.00	0.00	0.00	4,555.99	465.45	257.94	532.14	0.00	0.00	0.00
4,700.00	0.00	0.00	4,655.99	465.45	257.94	532.14	0.00	0.00	0.00
4,800.00	0.00	0.00	4,755.99	465.45	257.94	532.14	0.00	0.00	0.00
4,900.00	0.00	0.00	4,855.99	465.45	257.94	532.14	0.00	0.00	0.00
4,934.01	0.00	0.00	4,890.00	465.45	257.94	532.14	0.00	0.00	0.00
WASATCH									
5,000.00	0.00	0.00	4,955.99	465.45	257.94	532.14	0.00	0.00	0.00
5,100.00	0.00	0.00	5,055.99	465.45	257.94	532.14	0.00	0.00	0.00
5,200.00	0.00	0.00	5,155.99	465.45	257.94	532.14	0.00	0.00	0.00
5,300.00	0.00	0.00	5,255.99	465.45	257.94	532.14	0.00	0.00	0.00
5,400.00	0.00	0.00	5,355.99	465.45	257.94	532.14	0.00	0.00	0.00
5,500.00	0.00	0.00	5,455.99	465.45	257.94	532.14	0.00	0.00	0.00
5,600.00	0.00	0.00	5,555.99	465.45	257.94	532.14	0.00	0.00	0.00
5,700.00	0.00	0.00	5,655.99	465.45	257.94	532.14	0.00	0.00	0.00
5,700.00	0.00	0.00	5,055.99	405.45	257.94	552.14	0.00	0.00	0.00
5,800.00	0.00	0.00	5,755.99	465.45	257.94	532.14	0.00	0.00	0.00
5,900.00	0.00	0.00	5,855.99	465.45	257.94	532.14	0.00	0.00	0.00
6,000.00	0.00	0.00	5,955.99	465.45	257.94	532.14	0.00	0.00	0.00
6,100.00	0.00	0.00	6,055.99	465.45	257.94	532.14	0.00	0.00	0.00
6,200.00	0.00	0.00	6,155.99	465.45	257.94	532.14	0.00	0.00	0.00
6,300.00	0.00	0.00	6,255.99	465.45	257.94	532.14	0.00	0.00	0.00
6,400.00	0.00	0.00	6,355.99	465.45	257.94	532.14	0.00	0.00	0.00
6,500.00	0.00	0.00	6,455.99	465.45	257.94	532.14	0.00	0.00	0.00
6,600.00	0.00	0.00	6,555.99	465.45	257.94	532.14	0.00	0.00	0.00
6,700.00	0.00	0.00	6,655.99	465.45	257.94	532.14	0.00	0.00	0.00
6,800.00	0.00	0.00	6,755.99	465.45	257.94	532.14	0.00	0.00	0.00
6,900.00	0.00	0.00	6,855.99	465.45	257.94	532.14	0.00	0.00	0.00
7,000.00	0.00	0.00	6,955.99	465.45	257.94	532.14	0.00	0.00	0.00
7,100.00	0.00	0.00	7,055.99	465.45	257.94	532.14	0.00	0.00	0.00
7,200.00	0.00	0.00	7,155.99	465.45	257.94	532.14	0.00	0.00	0.00
7,300.00	0.00	0.00	7,255.99	465.45	257.94	532.14	0.00	0.00	0.00
7,400.00	0.00	0.00	7,355.99	465.45	257.94	532.14	0.00	0.00	0.00
7,500.00	0.00	0.00	7,455.99	465.45	257.94	532.14	0.00	0.00	0.00
7,600.00	0.00	0.00	7,555.99	465.45	257.94	532.14	0.00	0.00	0.00
7,700.00	0.00	0.00	7,655.99	465.45	257.94	532.14	0.00	0.00	0.00
7,800.00	0.00	0.00	7,755.99	465.45	257.94	532.14	0.00	0.00	0.00
7,900.00	0.00	0.00	7,855.99	465.45	257.94	532.14	0.00	0.00	0.00
7,930.01	0.00	0.00	7,886.00	465.45	257.94	532.14	0.00	0.00	0.00
MESAVERD			<b>-</b> 0 0-	46	0	mes			
8,000.00	0.00	0.00	7,955.99	465.45	257.94	532.14	0.00	0.00	0.00
8,100.00	0.00	0.00	8,055.99	465.45	257.94	532.14	0.00	0.00	0.00
8,200.00	0.00	0.00	8,155.99	465.45	257.94	532.14	0.00	0.00	0.00
8,300.00	0.00	0.00	8,255.99	465.45	257.94	532.14	0.00	0.00	0.00
8,400.00	0.00	0.00	8,355.99	465.45	257.94	532.14	0.00	0.00	0.00
8,500.00	0.00	0.00	8,455.99	465.45	257.94	532.14	0.00	0.00	0.00
8,600.00	0.00	0.00	8,555.99	465.45	257.94	532.14	0.00	0.00	0.00
8,700.00 8,800.00	0.00 0.00	0.00 0.00	8,655.99 8,755.99	465.45 465.45	257.94 257.94	532.14 532.14	0.00 0.00	0.00 0.00	0.00 0.00





Database: EDM 5000.1 Single User Db
Company: US ROCKIES REGION PLANNING
Project: UTAH - UTM (feet), NAD27, Zone 12N

 Site:
 NBU 921-29G PAD

 Well:
 NBU 921-29B4CS

Wellbore: OH

Design: PLAN #1 PRELIMINARY

Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:

**Survey Calculation Method:** 

Well NBU 921-29B4CS

GL 4867 & 4 @ 4871.00ft (ASSUMED) GL 4867 & 4 @ 4871.00ft (ASSUMED)

True

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,900.00	0.00	0.00	8,855.99	465.45	257.94	532.14	0.00	0.00	0.00
9,000.00	0.00	0.00	8,955.99	465.45	257.94	532.14	0.00	0.00	0.00
9,100.00	0.00	0.00	9,055.99	465.45	257.94	532.14	0.00	0.00	0.00
9,200.00	0.00	0.00	9,155.99	465.45	257.94	532.14	0.00	0.00	0.00
9,300.00	0.00	0.00	9,255.99	465.45	257.94	532.14	0.00	0.00	0.00
9,400.00	0.00	0.00	9,355.99	465.45	257.94	532.14	0.00	0.00	0.00
9,500.00	0.00	0.00	9,455.99	465.45	257.94	532.14	0.00	0.00	0.00
9,600.00	0.00	0.00	9,555.99	465.45	257.94	532.14	0.00	0.00	0.00
9,700.00 9,800.00 9,900.00 10,000.00 10,100.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	9,655.99 9,755.99 9,855.99 9,955.99 10,055.99	465.45 465.45 465.45 465.45	257.94 257.94 257.94 257.94 257.94	532.14 532.14 532.14 532.14 532.14	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
10,167.01	0.00 NBU 921-29B	0.00	10,123.00	465.45	257.94	532.14	0.00	0.00	0.00
10,200.00	0.00	0.00	10,155.99	465.45	257.94	532.14	0.00	0.00	0.00
10,232.01	0.00	0.00	10,188.00	465.45	257.94	532.14	0.00	0.00	0.00
CASTLEGATI									
10,300.00	0.00	0.00	10,255.99	465.45	257.94	532.14	0.00	0.00	0.00
10,400.00	0.00	0.00	10,355.99	465.45	257.94	532.14	0.00	0.00	0.00
10,500.00	0.00	0.00	10,455.99	465.45	257.94	532.14	0.00	0.00	0.00
10,600.00	0.00	0.00	10,555.99	465.45	257.94	532.14	0.00	0.00	0.00
10,617.01	0.00	0.00	10,573.00	465.45	257.94	532.14	0.00	0.00	0.00
BLACKHAWK	(								
10,700.00	0.00	0.00	10,655.99	465.45	257.94	532.14	0.00	0.00	0.00
10,800.00	0.00	0.00	10,755.99	465.45	257.94	532.14	0.00	0.00	0.00
10,900.00	0.00	0.00	10,855.99	465.45	257.94	532.14	0.00	0.00	0.00
11,000.00	0.00	0.00	10,955.99	465.45	257.94	532.14	0.00	0.00	0.00
11,100.00	0.00	0.00	11,055.99	465.45	257.94	532.14	0.00	0.00	0.00
11,200.00	0.00	0.00	11,155.99	465.45	257.94	532.14	0.00	0.00	0.00
11,217.01	0.00	0.00	11,173.00	465.45	257.94	532.14	0.00	0.00	0.00

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SEGO_NBU 921-29B4C - plan hits target cent - Circle (radius 25.00		0.00	10,123.00	465.45	257.94	14,533,227.47	2,040,311.72	40.0109260	-109.5718990
PBHL_NBU 921-29B4Ct - plan hits target cent - Circle (radius 100.0		0.00	11,173.00	465.45	257.94	14,533,227.47	2,040,311.72	40.0109260	-109.5718990

Casing Points						
	Measured	Vertical		Casin	g	Hole
	Depth	Depth		Diamet	er	Diameter
	(ft)	(ft)	N	lame (in)		(in)
	2,823.27	2,790.00	8 5/8"	8	.625	11.000





Database: EDM 5000.1 Single User Db
Company: US ROCKIES REGION PLANNING

UTAH - UTM (feet), NAD27, Zone 12N

 Site:
 NBU 921-29G PAD

 Well:
 NBU 921-29B4CS

Wellbore: OH

Project:

Design: PLAN #1 PRELIMINARY

Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:

**Survey Calculation Method:** 

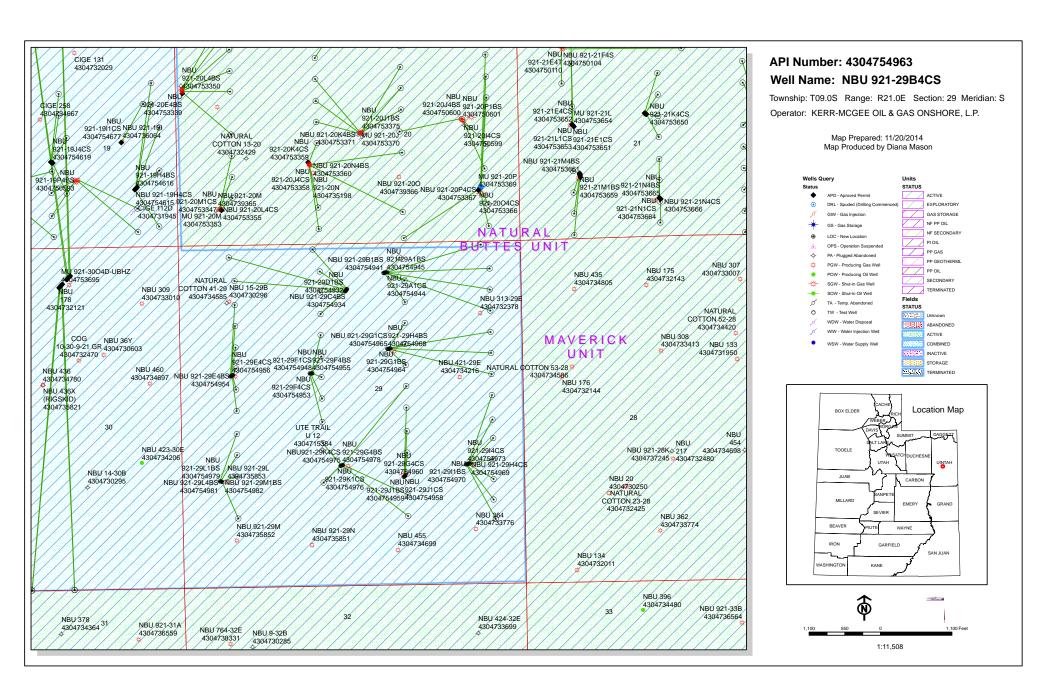
Well NBU 921-29B4CS

GL 4867 & 4 @ 4871.00ft (ASSUMED) GL 4867 & 4 @ 4871.00ft (ASSUMED)

True

rmations							
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
	1,586.48	1,572.00	GREEN RIVER				
	1,852.52	1,834.00	BIRDSNEST				
	2,366.33	2,340.00	MAHOGANY				
	4,934.01	4,890.00	WASATCH				
	7,930.01	7,886.00	MESAVERDE				
	10,167.01	10,123.00	SEGO				
	10,232.01	10,188.00	CASTLEGATE				
	10,617.01	10,573.00	BLACKHAWK				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coord +N/-S (ft)	dinates +E/-W (ft)	Comment
300.00	300.00	0.00	0.00	Start Build 2.00
800.00	797.47	38.07	21.10	Start 2563.23 hold at 800.00 MD
3,363.23	3,321.75	427.38	236.84	Start Drop -2.00
3,863.23	3.819.22	465.45	257.94	Start 7353.78 hold at 3863.23 MD
11,217.01	11,173.00	465.45	257.94	TD at 11217.01



# **United States Department of the Interior**

### BUREAU OF LAND MANAGEMENT

Utah State Office 440 West 200 South, Suite 500 Salt Lake City, UT 84101

IN REPLY REFER TO: 3160 (UT-922)

November 25, 2014

Memorandum

To: Assistant Field Office Manager Minerals,

Vernal Field Office

From: Michael Coulthard, Petroleum Engineer

Subject: 2014 Plan of Development Natural Buttes Unit

Uintah County, Utah.

Pursuant to email between Diana Mason, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2014 within the Natural Buttes Unit, Uintah County, Utah.

API # WELL NAME LOCATION

(Proposed PZ WASATCH-MESA VERDE) PAD NBU 921-29C

PAD NBU 921-29C							
43-047-54931 NBU	921-29D1CS		_	 R21E R21E			
43-047-54932 NBU	921-29D1BS		_	 R21E R21E		-	
43-047-54933 NBU				R21E R21E			
43-047-54934 NBU	921-29C4BS		_	 R21E R21E			
43-047-54935 NBU	921-29C1CS			R21E R21E			
43-047-54936 NBU PAD NBU 921-29B	921-29C1BS		_	 R21E R21E			
43-047-54939 NBU	921-29B4BS			R21E R21E			
43-047-54940 NBU	921-29B1CS			R21E R21E			
43-047-54941 NBU	921-29B1BS		_	 R21E R21E	-	_	
43-047-54942 NBU				R21E R21E			
43-047-54943 NBU	921-29A4BS		-	 R21E R21E			

Received: November 28, 2014

(Proposed PZ PAD NBU 921-		ATCH-MESA VI	ERDE	)							
43-047-54944		921-29A1CS	BHL	Sec Sec	29 29	T09S T09S	R21E R21E	0441 0408	FNL FNL	2069 0489	FEL FEL
43-047-54945			BHL	Sec Sec	29 29	T09S T09S	R21E R21E	0442 0034	FNL FNL	2079 0619	FEL FEL
<b>PAD NBU 921-</b> 43-047-54946		921-29D4BS		Sec	29		R21E	2010	FNL	0734	FWL
43-047-54947	NBU	921-29D4CS				T09S T09S					
43-047-54949	NBU	921-29E1BS	BHL	Sec Sec	29 29	T09S T09S	R21E R21E	2000 1556	FNL FNL	0751 0820	FWL FWL
43-047-54950	NBU	921-29E1CS				T09S T09S					
43-047-54954	NBU	921-29E4BS	BHL	Sec Sec	29 29	T09S T09S	R21E R21E	1990 2210	FNL FNL	0768 0820	FWL FWL
43-047-54956						T09S T09S					
<b>PAD NBU 921-</b> 43-047-54948		921-29F1CS				T09S T09S					
43-047-54951	NBU	921-29K1BS				T09S T09S					
43-047-54952	NBU!	921-29F1BS	BHL	Sec Sec	29 29	T09S T09S	R21E R21E	1981 1390	FNL FNL	1980 2137	FWL FWL
43-047-54953	NBU	921-29F4CS				T09S T09S					
43-047-54955 <b>PAD NBU 921-</b>	NBU	921-29F4BS	BHL	Sec Sec	29 29	T09S T09S	R21E R21E	1980 2044	FNL FNL	2000 2140	FWL FWL
43-047-54957	NBU	921-29J4BS		Sec	29	T09S T09S	R21E	1689	FSL	1850	FEL
43-047-54958	NBU					T09S T09S					
43-047-54959	NBU	921-29J1BS				T09S T09S					
43-047-54960						T09S T09S					
<b>PAD NBU 921-</b> 43-047-54961		921-29P1CS				T09S T09S					
43-047-54962	NBU	921-29P1BS				T09S T09S					
43-047-54969	NBU					T09S T09S					
43-047-54970	NBU					T09S T09S					
43-047-54971	NBU	921-29I1CS				T09S T09S					

(Proposed PZ WASATCH-MESA VERDE)

PAD NBU 921-2		001 00-1		_			- 0.1 -	1000			
43-047-54972	NBU						R21E R21E				
43-047-54973 <b>PAD NBU 921-2</b>	NBU	921-29I4CS	BHL	Sec Sec	29 29	T09S T09S	R21E R21E	1852 1618	FSL FSL	0887 0489	FEL FEL
43-047-54963	NBU	921-29B4CS		Sec	29	T09S	R21E	1619	FNL	2069	FEL
43-047-54964	NBU						R21E R21E				
43-047-54965	NBU	921-29G1CS									
43-047-54966	NBU	921-29H1BS									
43-047-54967	NBU	921-29H1CS									
43-047-54968 <b>PAD NBU 921-2</b>	NBU	921-29H4BS	BHL	Sec Sec	29 29	T09S T09S	R21E R21E	1621 2042	FNL FNL	2079 0491	FEL FEL
<b>PAD NBU 921-2</b> 43-047-54974	NBU	921-2901BS		Sec	29	T09S	R21E R21E	1862	FSL	2432	FWL
43-047-54975	NBU9						R21E R21E				
43-047-54976	NBU	921-29K1CS									
43-047-54977	NBU	921-29J4CS									
43-047-54978		921-29G4BS	BHL	Sec Sec	29 29	T09S T09S	R21E R21E	1865 2208	FSL FNL	2441 1811	FWL FEL
<b>PAD NBU 921-2</b> 43-047-54979				Sec	29	T09S	R21E	1643	FSL	0551	FWL
43-047-54980	NBU	921-29L1CS					R21E R21E				
43-047-54981	NBU						R21E R21E				
43-047-54982	NBU						R21E R21E				
<b>PAD NBU 921-3</b> 43-047-54986		921-30H1CS					R21E R21E				
43-047-54987	NBU						R21E R21E				
43-047-54988	NBU						R21E R21E				
43-047-54989	NBU	921-30B1BS					R21E R21E				

LOCATION

(Proposed PZ WASATCH-MESA VERDE)

<b>PAD NBU 921-3</b> 43-047-54990	<b>30A</b> NBU						R21E R21E				
43-047-54991 <b>PAD NBU 921-2</b>	NBU	921-30A1BS	BHL	Sec Sec	30 30	T09S T09S	R21E R21E	0828 0194	FNL FNL	0662 0560	FEL FEL
<b>PAD NBU 921-2</b> 43-047-54992	<b>290</b> NBU	921-29P4BS		Sec	29	T09S	R21E	0496	FSL	1679	FEL
43-047-54993	NBU	921-2904CS									
43-047-54994	NBU	921-2904BS	BHL	Sec Sec	29 29	T09S T09S	R21E R21E	0486 0409	FSL FSL	1708 1820	FEL FEL
43-047-54995  PAD NBU 921-2	NBU	921-2901CS	BHL	Sec Sec	29 29	T09S T09S	R21E R21E	0489 0736	FSL FSL	1698 1819	FEL FEL
<b>PAD NBU 921-2</b> 43-047-54996	<b>29N</b> NBU	921-29N4CS		Sec	29	T09S	R21E R21E	0623	FSL	1903	FWL
43-047-54997	NBU						R21E R21E				
43-047-54998	NBU						R21E R21E				
43-047-54999 <b>PAD NBU 921-</b> 3	NBU	921-29M4BS	BHL	Sec Sec	29 29	T09S T09S	R21E R21E	0633 0320	FSL FSL	1902 0782	FWL FWL
<b>PAD NBU 921-</b> 3 43-047-55003	BOD NBU	921-30C1BS		Sec	30	T09S	R21E R21E	0730	FNL	0847	FWL
43-047-55004	NBUS	921-30D1BS	BHL	Sec Sec	30 30	T09S T09S	R21E R21E	0707 0210	FNL FNL	0814 0875	FWL FWL
43-047-55005	NBU						R21E R21E				
43-047-55006	NBU						R21E R21E				
43-047-55007	NBU						R21E R21E				
43-047-55008	NBU	921-30E1CS					R21E R21E				

This office has no objection to permitting the wells at this time.



bcc: File - Natural Buttes Unit
 Division of Oil Gas and Mining

Central Files Agr. Sec. Chron Fluid Chron

MCoulthard:mc:11-25-14



# State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

# Permit To Drill

\*\*\*\*\*

Well Name: NBU 921-29B4CS **API Well Number:** 43047549630000

Lease Number: UTU 0581 Surface Owner: FEDERAL Approval Date: 12/17/2014

#### Issued to:

KERR-MCGEE OIL & GAS ONSHORE, L.P., P.O. Box 173779, Denver, CO 80217

#### Authority:

Pursuant to Utah Code Ann. 40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of Cause 173-14. The expected producing formation or pool is the WASATCH-MESA VERDE Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

#### **Duration:**

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

#### **Commingle:**

In accordance with Board Cause No. 173-14, commingling of the production from the Wasatch formation and the Mesaverde formation in this well is allowed.

#### General:

Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

### **Conditions of Approval:**

State approval of this well does not supercede the required federal approval, which must be obtained prior to drilling.

In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.

In accordance with the Order in Cause No. 190-5(b) dated October 28, 1982, the operator shall comply with the requirements of Rules R649-3-31 and R649-3-27 pertaining to Designated Oil Shale Areas. Additionally, the operators shall ensure that the surface and or production casing is properly cemented over the entire oil

shale section as defined by Rule R649-3-31. The Operator shall report the actual depth the oil shale is encountered to the division.

## **Notification Requirements:**

The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

• Within 24 hours following the spudding of the well - contact Carol Daniels at 801-538-5284

(please leave a voicemail message if not available)

submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website

at http://oilgas.ogm.utah.gov

## Reporting Requirements:

All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:

- Entity Action Form (Form 6) due within 5 days of spudding the well
- Monthly Status Report (Form 9) due by 5th day of the following calendar month
  - Requests to Change Plans (Form 9) due prior to implementation
  - Written Notice of Emergency Changes (Form 9) due within 5 days
- Notice of Operations Suspension or Resumption (Form 9) due prior to implementation
  - Report of Water Encountered (Form 7) due within 30 days after completion
- Well Completion Report (Form 8) due within 30 days after completion or plugging

Approved By:

For John Rogers Associate Director, Oil & Gas (August 2007)

UNITED STATES AUG 2 0 2014 DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

FORM APPROVED OMB No. 1004-0136 Expires July 31, 2010

BOILERO OF ERIOD	WILL WILLIAM TO THE STATE OF TH	<u>UT</u> U0581	
APPLICATION FOR PERMIT	TO DRILL OR REENTEY CINA	d Il Indian, Allottee or Tribe Nam	e
la. Type of Work: 🖸 DRILL 🔲 REENTER		7. If Unit or CA Agreement, Name UTU63047A	and No.
1b. Type of Well: ☐ Oil Well    Gas Well ☐ Ot	her 🔲 Single Zone 🗷 Multiple Zone	8. Lease Name and Well No. NBU 921-29B4CS	
2. Name of Operator Contact: KERR-MCGEE OIL & GAS ONSHORM ail: JOEL.M	JOEL MALEFYT IALEFYT@ANADARKO.COM	9. API Well No. 430475496	3
3a. Address P.O. BOX 173779 DENVER, CO 80202-3779	3b. Phone No. (include area code) Ph: 720-929-6828 Fx: 720-929-7828	10. Field and Pool, or Exploratory NATURAL BUTTES	
4. Location of Well (Report location clearly and in accorded	ince with any State requirements.*)	11. Sec., T., R., M., or Blk. and Sur	rvey or Area
At surface SWNE 1619FNL 2069FEL	40.009812 N Lat, 109.573509 W Lon	Sec 29 T9S R21E Mer SL	В
At proposed prod. zone NWNE 1227FNL 1809FEL	40.011788 N Lat, 109.572587 W Lon		
14. Distance in miles and direction from nearest town or post 46.4 MILES SOUTH OF VERNAL, UT	office*	12. County or Parish UINTAH	13. State UT
<ol> <li>Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1227</li> </ol>	16. No. of Acres in Lease 2400.00 RECEIVED	17. Spacing Unit dedicated to this v	vell
18 Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 399	19. Proposed Depth JAN <b>2 9</b> 2015 11217 MD 11173 TVD	20. BLM/BIA Bond No. on file WYB000291	
21. Elevations (Show whether DF, KB, RT, GL, etc. 4867 GL	22. Approximate date <b>Polik Oli sull</b> ., GAS & William 01/01/2015	23. Estimated duration 60-90 DAYS	
	24. Attachments		
The following, completed in accordance with the requirements o	f Onshore Oil and Gas Order No. 1, shall be attached to the	nis form:	
<ol> <li>Well plat certified by a registered surveyor.</li> <li>A Drilling Plan.</li> <li>A Surface Use Plan (if the location is on National Forest Syst SUPO shall be filed with the appropriate Forest Service Off</li> </ol>	Item 20 above).  5. Operator certification	ns unless covered by an existing bond ormation and/or plans as may be required.	`
25. Signature (Electronic Submission)	Name (Printed/Typed) JOEL MALEFYT Ph: 720-929-6828	Date 08/	14/2014
Title REGULATORY ANALYST			
Approved by (Signature)	Name (Printed/Typed)  Jerry Kencz	ka AN	2 6 2015
Title Assistant Field Manager Lands & Mineral Resources	Office VERNAL FIELD OFFICE		
Application approval does not warrant or certify the applicant hole	ds legal or equitable title to those rights in the subject lead	se which would entitle the applicant to	conduct

operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

### Additional Operator Remarks (see next page)

Electronic Submission #257115 verified by the BLM Well Information System For KERR-MCGEE OIL & GAS ONSHORE, sent to the Vernal Committed to AFMSS for processing by JEANNE NEWMAN on 08/20/2014 ()

VOTICE OF APPROVAL



# UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT VERNAL FIELD OFFICE

ERNAL FIELD OFFICE VERNAL, UT 84078

(435) 781-4400



### CONDITIONS OF APPROVAL FOR APPLICATION FOR PERMIT TO DRILL

Company: Well No:

**KERR-MCGEE OIL&GAS ONSHORE** 

NBU 921-29B4CS

API No: 43-047-54963

Location: Lease No: Agreement: SWNE, Sec. 29, T9S, R21E

UTU-0581

**OFFICE NUMBER:** 

(435) 781-4400

**OFFICE FAX NUMBER:** 

(435) 781-3420

## A COPY OF THESE CONDITIONS SHALL BE FURNISHED TO YOUR FIELD REPRESENTATIVE TO INSURE COMPLIANCE

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (43 CFR Part 3160), and this approved Application for Permit to Drill including Surface and Downhole Conditions of Approval. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling, and completion operations. This permit is approved for a two (2) year period, or until lease expiration, whichever occurs first. An additional extension, up to two (2) years, may be applied for by sundry notice prior to expiration.

#### **NOTIFICATION REQUIREMENTS**

Location Construction (Notify Environmental Scientist)	-	Forty-Eight (48) hours prior to construction of location and access roads.
Location Completion (Notify Environmental Scientist)	-	Prior to moving on the drilling rig.
Spud Notice (Notify Petroleum Engineer)	-	Twenty-Four (24) hours prior to spudding the well.
Casing String & Cementing (Notify Supv. Petroleum Tech.)	-	Twenty-Four (24) hours prior to running casing and cementing all casing strings to:  blm_ut_vn_opreport@blm.gov
BOP & Related Equipment Tests (Notify Supv. Petroleum Tech.)	-	Twenty-Four (24) hours prior to initiating pressure tests.
First Production Notice (Notify Petroleum Engineer)	-	Within Five (5) business days after new well begins or production resumes after well has been off production for more than ninety (90) days.

### SURFACE USE PROGRAM CONDITIONS OF APPROVAL (COAs)

- All new and replacement internal combustion gas field engines of less than or equal to 300 designrated horsepower must not emit more than 2 gms of NO<sub>x</sub> per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower.
- All and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gms of NO<sub>x</sub> per horsepower-hour.
- If there is an active Gilsonite mining operation within 2 miles of the well location, operator shall notify the Gilsonite operator at least 48 hours prior to any blasting during construction.
- If paleontological materials are uncovered during construction, the operator is to immediately stop
  work and contact the Authorized Officer (AO). A determination will be made by the AO as to what
  mitigation may be necessary for the discovered paleontologic material before construction can
  continue.

**NBU 921-29G Well Pad:** NBU 921-29G1CS, NBU 921-29H4BS, NBU 921-29B4CS, NBU 921-29H1CS, NBU 921-29G1BS, NBU 921-29H1BS:

• Paleontological monitoring by a BLM permitted paleontologist is required during all ground-disturbing activities for proposed development areas found to have scientifically important fossils or in locations of high fossil potential (BLM 2012b).

Raptor management will be guided by the use of "Best Management Practices for Raptors and Their Associated Habitats in Utah" (BLM 2008 Appendix A) and "Fluid Minerals Best Management Practices" (BLM 2008 Appendix R), utilizing seasonal and spatial buffers, as well as mitigation, to maintain and enhance raptor nesting and foraging habitat, while allowing other resource uses.

- Construction and development activities will be seasonally limited for Great Horned Owls from 2/1 through 9/31, pending the results of a preconstruction nest occupancy survey (BLM 2008).
- Construction and development activities will be seasonally limited for Golden Eagle from 1/1 through 8/31, pending the results of a preconstruction nest occupancy survey (BLM 2008).
- Construction and development activities will be seasonally limited for Prairie Falcon from 4/1 through 8/31, pending the results of a preconstruction nest occupancy survey (BLM 2008).
- Raptor perch avoidance devices will be installed on all new power lines and existing lines that present a potential hazard to raptors (BLM 2008).
- Bird exclusion netting will be installed over reserve pits containing water that are left open for more than 30 days to reduce possibility of exposure to hazardous chemicals (BLM 2012b).
- KMG will install bird-excluding devises that prevent the perching and entry of migratory birds on or into its new fired vessel exhaust stacks (BLM 2012b).

Page 3 of 8 Well: NBU 921-29B4CS 1/15/2015

### Generic COAs for all locations within the Greater Natural Buttes EIS (MAY 2012)

- A Class III archeological survey has been conducted on all federal and/or Indian Trust lands in the GNBPA. All personnel would refrain from collecting artifacts and from disturbing any significant cultural resources in the area. KMG would be responsible for informing all persons in the area who are associated with this Project that they may be subject to prosecution for knowingly disturbing historic or archaeological sites or for collecting artifacts. All vehicular traffic, personnel movement, construction, and restoration activities would be confined to the areas examined, as referenced in the archaeological report, and to the existing roadways and/or evaluated access routes. If historic or archaeological materials were to be uncovered during construction, KMG would immediately stop surface disturbing activities that might further disturb such materials and contact the appropriate Authorized Officer (AO).
- If blasting operations are scheduled to occur within 2 miles of an active gilsonite mine, the mine operator would be notified at least 48 hours prior to blasting to coordinate activities for mine worker safety.
- KMG would conduct a paleontological survey on all of its federal locations. All personnel would refrain from collecting fossils and from disturbing any significant fossil in the GNBPA.
- An infiltration gallery will be constructed in a USFWS-approved location. An infiltration gallery is
  basically a pit or trench dug within a floodplain to a depth below the water table. Water is drawn
  from the pit rather than from the river directly. If this is not possible, KMG will limit pumping within
  the river to off-channel locations that do not connect to the river during high spring flows.
- If water cannot be drawn using the measures below, and the pump head will be located in the river channel where larval fish are known to occur, the following measures will apply (BLM 2012b):
- KMG will avoid pumping from low-flow or no-flow areas as these habitats tend to concentrate larval fishes;
  - o KMG will avoid pumping to the greatest extent possible, during that period of the year when larval fish may be present (approximately April 1 to August 31);
  - o KMG will avoid pumping, to the greatest extent possible, during the midnight hours (10:00 pm to 2:00am) as larval drift studies indicate that is a period of greatest daily activity. Dusk is the preferred pumping time as larval drift abundance is lowest.
  - o KMG will screen all pump intakes with 3/32-inch mesh material..
- Damage to livestock and livestock facilities would be reported as quickly as possible to the BLM
  and affected livestock operators. Operators would develop and employ prevention measures to
  avoid damaging fences, gates, and cattleguards, including upgrading cattleguard gate widths and
  load-bearing requirements and fencing all open pits and cellars
- If partial or complete removal of a fence cannot be avoided, the fence would be braced and tied off per the BLM guidance. Where the fence is crossed by a road, the fence would be braced and a cattleguard and gate installed per BLM guidance.
- Speed limits would be followed and signs would be erected in lambing/calving areas, shipping
  pastures, or adjacent to working corrals to warn vehicle operators. (April 1 to June 1)
- In accordance with the procedures described in its Pesticide/ Herbicide Use Plan, KMG would monitor for the growth of invasive species resulting from surface disturbance caused by Project activities and would control weeds caused by Project activities.

Page 4 of 8 Well: NBU 921-29B4CS 1/15/2015

- KMG would use its best efforts to control noxious weeds along access road authorizations, pipeline
  route authorizations, well sites, or other proposed facilities by spraying or mechanical removal. A list
  of noxious weeds would be obtained from the BLM or the appropriate County Extension Office. On
  BLM-administered land, a Pesticide Use Proposal would be submitted and approved prior to the
  application of herbicides or other pesticides or possibly hazardous chemicals.
- KMG would conduct pre-disturbance weed inventories to identify locations of noxious and invasive weed species.
- A 1- or 2-year rest period or mechanical control would be required prior to reseeding on areas treated with herbicide spraying.
- An integrated weed management plan will be developed, and include the following components:
- Surveying for special status plant species before treating an area,
- Considering effects to special status species when designing herbicide treatment programs,
- Using drift reduction agents to reduce the risk of drift hazard, and
- Using selective herbicide and a wick to backpack sprayer to minimize risks to special plants.
- Dirt ramps would be built and maintained at an angle not to exceed 45 degrees every 150 to 200 feet along open pipeline trenches to reduce habitat fragmentation and increase accessibility of small animals (mammals, reptiles, amphibians) to adjacent habitats.
- On level or gently sloping ground (5 percent slope or less), surface pipelines (4 inches or greater in diameter) would be elevated a minimum of 6 inches above the ground to allow passage of small animals beneath the pipe. This ground clearance would be achieved by placing the pipeline on blocks at intervals of 150 or 200 feet or as appropriate.
- Bird Exclusion netting will be installed over reserve pits containing water that are left open for more than 30 days to reduce possibility of exposure to hazardous chemicals.
- KMG will install bird-excluding devices that prevent the perching and entry of migratory birds on or into its new fired vessel exhaust stacks.

Page 5 of 8 Well: NBU 921-29B4CS 1/15/2015

### DOWNHOLE PROGRAM CONDITIONS OF APPROVAL (COAs)

### SITE SPECIFIC DOWNHOLE COAs:

t9S..r21E..s29 Pad B 921-29B: nmWl NBU: #Wl 921-29A1BS 921-29A1CS 921-29A4BS 921-29A4CS 921-29B1BS 921-29B1CS 921-29B4BS

t9S..r21E..s29 Pad C 921-29C: nmWl NBU: #Wl 921-29C1BS 921-29C1CS 921-29C4BS 921-29C4CS 921-29D1BS 921-29D1CS

t9S..r21E..s29 Pad F 921-29F: nmWl NBU: #Wl 921-29F1BS 921-29F1CS 921-29F4BS 921-29F4CS 921-29K1BS

t9S..r21E..s29 Pad G 921-29G: nmWl NBU: #Wl 921-29B4CS 921-29G1BS 921-29G1CS 921-29H1BS 921-29H4BS

TD below 11000'

apd\_coa Downhole \_Anad(\_Kerr)

- Surface casing cement shall be brought to surface.
- Production casing cement shall be brought 200' up and into the surface casing.
- For the drilling of the surface hole section, operator is required to install an bowl diverter system or rotating head which is connected and discharges to an panic or choke blooie line. The surface hole section of the subject well is deeper then 2,000 ft.
- Operators downhole program is for one of two TD proposals, either formation Wasatch-Mesaverde or Blackhawk. COA covering BOPE applies for well if operator drilling drilling program is 'Blackhawk Drilling Program'.

Require useage of an modified 5m stack. The 5M BOPE (minimum) shall be a modified 5m BOPE stack to include a third (3) pipe ram and one (1) remote kill line.

All provisions outlined in Onshore Oil & Gas Order #2 Drilling Operations shall be strictly adhered to. The following items are emphasized:

### DRILLING/COMPLETION/PRODUCING OPERATING STANDARDS

- The spud date and time shall be reported orally to Vernal Field Office within 24 hours of spudding.
- Notify Vernal Field Office Supervisory Petroleum Engineering Technician at least 24 hours in advance of casing cementing operations and BOPE & casing pressure tests.
- All requirements listed in Onshore Order #2 III. E. Special Drilling Operations are applicable for air drilling of surface hole.
- Blowout prevention equipment (BOPE) shall remain in use until the well is completed or abandoned. Closing unit controls shall remain unobstructed and readily accessible at all times. Choke manifolds shall be located outside of the rig substructure.
- All BOPE components shall be inspected daily and those inspections shall be recorded in the daily
  drilling report. Components shall be operated and tested as required by Onshore Oil & Gas Order
  No. 2 to insure good mechanical working order. All BOPE pressure tests shall be performed by a
  test pump with a chart recorder and <u>NOT</u> by the rig pumps. Test shall be reported in the driller's
  log.

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- BOP drills shall be initially conducted by each drilling crew within 24 hours of drilling out from under the surface casing and weekly thereafter as specified in Onshore Oil & Gas Order No. 2.
- Casing pressure tests are required before drilling out from under all casing strings set and cemented in place.
- No aggressive/fresh hard-banded drill pipe shall be used within casing.
- Cement baskets shall not be run on surface casing.
- The operator must report all shows of water or water-bearing sands to the BLM. If flowing water is
  encountered it must be sampled, analyzed, and a copy of the analyses submitted to the BLM Vernal
  Field Office.
- The operator must report encounters of all non oil & gas mineral resources (such as Gilsonite, tar sands, oil shale, trona, etc.) to the Vernal Field Office, in writing, within 5 working days of each encounter. Each report shall include the well name/number, well location, date and depth (from KB or GL) of encounter, vertical footage of the encounter and, the name of the person making the report (along with a telephone number) should the BLM need to obtain additional information.
- A complete set of angular deviation and directional surveys of a directional well will be submitted to the Vernal BLM office engineer within 30 days of the completion of the well.
- While actively drilling, chronologic drilling progress reports shall be filed directly with the BLM,
   Vernal Field Office on a weekly basis in sundry, letter format or e-mail to the Petroleum Engineers until the well is completed.
- A cement bond log (CBL) will be run from the production casing shoe to the top of cement and shall be utilized to determine the bond quality for the production casing. Submit a field copy of the CBL to this office.
- Please submit an electronic copy of all other logs run on this well by CD (compact disc).
   This submission will supersede the requirement for submittal of paper logs to the BLM.
- There shall be no deviation from the proposed drilling, completion, and/or workover program as approved. Safe drilling and operating practices must be observed. Any changes in operation must have prior approval from the BLM Vernal Field Office.

Page 7 of 8 Well: NBU 921-29B4CS 1/15/2015

### **OPERATING REQUIREMENT REMINDERS:**

- All wells, whether drilling, producing, suspended, or abandoned, shall be identified in accordance with 43 CFR 3162.6. There shall be a sign or marker with the name of the operator, lease serial number, well number, and surveyed description of the well.
- For information regarding production reporting, contact the Office of Natural Resources Revenue (ONRR) at www.ONRR.gov.
- Should the well be successfully completed for production, the BLM Vernal Field office must be
  notified when it is placed in a producing status. Such notification will be by written communication
  and must be received in this office by not later than the fifth business day following the date on
  which the well is placed on production. The notification shall provide, as a minimum, the following
  informational items:
  - o Operator name, address, and telephone number.
  - Well name and number.
  - Well location (¼¼, Sec., Twn, Rng, and P.M.).
  - Date well was placed in a producing status (date of first production for which royalty will be paid).
  - The nature of the well's production, (i.e., crude oil, or crude oil and casing head gas, or natural gas and entrained liquid hydrocarbons).
  - o The Federal or Indian lease prefix and number on which the well is located; otherwise the non-Federal or non-Indian land category, i.e., State or private.
  - Unit agreement and/or participating area name and number, if applicable.
  - Communitization agreement number, if applicable.
- Any venting or flaring of gas shall be done in accordance with Notice to Lessees (NTL) 4A and needs prior approval from the BLM Vernal Field Office.
- All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in NTL 3A will be reported to the BLM, Vernal Field Office. Major events, as defined in NTL3A, shall be reported verbally within 24 hours, followed by a written report within 15 days. "Other than Major Events" will be reported in writing within 15 days. "Minor Events" will be reported on the Monthly Report of Operations and Production.
- Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (BLM Form 3160-4) shall be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3162.4-1. Two copies of all logs run, core descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, shall be filed on BLM Form 3160-4. Submit with the well completion report a geologic report including, at a minimum, formation tops, and a summary and conclusions. Also include deviation surveys, sample descriptions, strip logs, core data, drill stem test data, and results of production tests if performed. Samples (cuttings, fluid,

Page 8 of 8 Well: NBU 921-29B4CS 1/15/2015

and/or gas) shall be submitted only when requested by the BLM, Vernal Field Office.

- All off-lease storage, off-lease measurement, or commingling on-lease or off-lease, shall have prior written approval from the BLM Vernal Field Office.
- Oil and gas meters shall be calibrated in place prior to any deliveries. The BLM Vernal Field Office
  Petroleum Engineers will be provided with a date and time for the initial meter calibration and all
  future meter proving schedules. A copy of the meter calibration reports shall be submitted to the
  BLM Vernal Field Office. All measurement facilities will conform to the API standards for liquid
  hydrocarbons and the AGA standards for natural gas measurement. All measurement points shall
  be identified as the point of sale or allocation for royalty purposes.
- A schematic facilities diagram as required by Onshore Oil & Gas Order No. 3 shall be submitted to the BLM Vernal Field Office within 30 days of installation or first production, whichever occurs first. All site security regulations as specified in Onshore Oil & Gas Order No. 3 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with Onshore Oil & Gas Order No. 3.
- Any additional construction, reconstruction, or alterations of facilities, including roads, gathering
  lines, batteries, etc., which will result in the disturbance of new ground, shall require the filing of a
  suitable plan and need prior approval of the BLM Vernal Field Office. Emergency approval may be
  obtained orally, but such approval does not waive the written report requirement.
- No location shall be constructed or moved, no well shall be plugged, and no drilling or workover
  equipment shall be removed from a well to be placed in a suspended status without prior approval
  of the BLM Vernal Field Office. If operations are to be suspended for more than 30 days, prior
  approval of the BLM Vernal Field Office shall be obtained and notification given before resumption
  of operations.
- Pursuant to Onshore Oil & Gas Order No. 7, this is authorization for pit disposal of water produced from this well for a period of 90 days from the date of initial production. A permanent disposal method must be approved by this office and in operation prior to the end of this 90-day period. In order to meet this deadline, an application for the proposed permanent disposal method shall be submitted along with any necessary water analyses, as soon as possible, but no later than 45 days after the date of first production. Any method of disposal which has not been approved prior to the end of the authorized 90-day period will be considered as an Incident of Noncompliance and will be grounds for issuing a shut-in order until an acceptable manner for disposing of said water is provided and approved by this office.
- Unless the plugging is to take place immediately upon receipt of oral approval, the Field Office Petroleum Engineers must be notified at least 24 hours in advance of the plugging of the well, in order that a representative may witness plugging operations. If a well is suspended or abandoned, all pits must be fenced immediately until they are backfilled. The "Subsequent Report of Abandonment" (Form BLM 3160-5) must be submitted within 30 days after the actual plugging of the well bore, showing location of plugs, amount of cement in each, and amount of casing left in hole, and the current status of the surface restoration.

Sundry Number: 67963 API Well Number: 43047549630000

	STATE OF UTAH		FORM 9
DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING			5.LEASE DESIGNATION AND SERIAL NUMBER: UTU 0581
SUNDR	RY NOTICES AND REPORTS O	N WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
	posals to drill new wells, significantly de reenter plugged wells, or to drill horizont n for such proposals.		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-29B4CS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	ISHORE, L.P.		9. API NUMBER: 43047549630000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th	n Street, Suite 600, Denver, CO, 80217	PHONE NUMBER: 3779 720 929-6	9. FIELD and POOL or WILDCAT: 50XTURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1619 FNL 2069 FEL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSH Qtr/Qtr: SWNE Section: 2	HP, RANGE, MERIDIAN: 29 Township: 09.0S Range: 21.0E Meridia	an: S	STATE: UTAH
11. CHECI	K APPROPRIATE BOXES TO INDICATE	NATURE OF NOTICE, REPOF	RT, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
Kerr-McGee Oil & G an extension to this	CHANGE TO PREVIOUS PLANS CHANGE WELL STATUS DEEPEN OPERATOR CHANGE PRODUCTION START OR RESUME REPERFORATE CURRENT FORMATION TUBING REPAIR WATER SHUTOFF WILDCAT WELL DETERMINATION  COMPLETED OPERATIONS. Clearly show all as Onshore, L.P. (Kerr-McGer APD for the maximum time a with any questions and/or co	e) respectfully requests llowed. Please contact	CASING REPAIR  CHANGE WELL NAME  CONVERT WELL TYPE  NEW CONSTRUCTION  PLUG BACK  RECOMPLETE DIFFERENT FORMATION  TEMPORARY ABANDON  WATER DISPOSAL  ✓ APD EXTENSION  OTHER:  Debermine 1007 of 2015  Oil, Gas and Mining  Date:  By:
NAME (PLEASE PRINT)	PHONE NUMBE	R TITLE	
Jennifer Thomas  SIGNATURE	720 929-6808	Regulatory Specialist  DATE	
N/A		11/30/2015	

Sundry Number: 67963 API Well Number: 43047549630000



### The Utah Division of Oil, Gas, and Mining

- State of Utah
- Department of Natural Resources

**Electronic Permitting System - Sundry Notices** 

### Request for Permit Extension Validation Well Number 43047549630000

API: 43047549630000 Well Name: NBU 921-29B4CS

Location: 1619 FNL 2069 FEL QTR SWNE SEC 29 TWNP 090S RNG 210E MER S

Company Permit Issued to: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Date Original Permit Issued: 12/17/2014

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision. Following is a checklist of some items related to the application, which should be verified.

• If located on private land, has the ownership changed, if so, has the surface agreement been updated?  Yes  No
<ul> <li>Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location?</li> <li>Yes</li> <li>No</li> </ul>
<ul> <li>Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well?</li> <li>Yes</li> <li>No</li> </ul>
<ul> <li>Have there been any changes to the access route including ownership, or rightof- way, which could affect the proposed location?</li> <li>Yes</li> <li>No</li> </ul>
• Has the approved source of water for drilling changed?   Yes  No
• Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation?  Yes  No
• Is bonding still in place, which covers this proposed well?   Yes   No
nature: Jennifer Thomas Date: 11/30/2015

Sig

Title: Regulatory Specialist Representing: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Sundry Number: 75924 API Well Number: 43047549630000

	STATE OF UTAH		FORM 9
DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		5.LEASE DESIGNATION AND SERIAL NUMBER: UTU 0581	
SUNDF	RY NOTICES AND REPORTS (	ON WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
	oposals to drill new wells, significantly or reenter plugged wells, or to drill horizon n for such proposals.		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-29B4CS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	NSHORE, L.P.		9. API NUMBER: 43047549630000
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18t	h Street, Suite 600, Denver, CO, 80217	<b>PHONE NUMBER:</b> 3779 720 929-	9. FIELD and POOL or WILDCAT: 456ATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1619 FNL 2069 FEL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSI	HIP, RANGE, MERIDIAN: 29 Township: 09.0S Range: 21.0E Meridi	an: S	STATE: UTAH
11. CHEC	K APPROPRIATE BOXES TO INDICAT	E NATURE OF NOTICE, REPOR	RT, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	ACIDIZE	ALTER CASING	CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME
11/3/2016	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE
SUBSEQUENT REPORT	DEEPEN	FRACTURE TREAT	□ NEW CONSTRUCTION
Date of Work Completion:	OPERATOR CHANGE	PLUG AND ABANDON	PLUG BACK
	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
SPUD REPORT Date of Spud:		SIDETRACK TO REPAIR WELL	
Jano Sr Spaan	REPERFORATE CURRENT FORMATION		TEMPORARY ABANDON
	TUBING REPAIR	└─ VENT OR FLARE	WATER DISPOSAL
DRILLING REPORT Report Date:	WATER SHUTOFF	SI TA STATUS EXTENSION	✓ APD EXTENSION
	WILDCAT WELL DETERMINATION	OTHER	OTHER:
Kerr-McGee Oil & G an extension to this	COMPLETED OPERATIONS. Clearly show a gas Onshore, L.P. (Kerr-McGe APD for the maximum time a with any questions and/or co	ee) respectfully requests allowed. Please contact	Approved by the UNakeDimbiero(08012016 Oil, Gas and Mining
			By: Brooggill
NAME (PLEASE PRINT)	PHONE NUMBE	ER TITLE	
Joel Malefyt	720 929-6828	Regualtory Analyst	
SIGNATURE N/A		<b>DATE</b> 11/3/2016	

Sundry Number: 75924 API Well Number: 43047549630000



### The Utah Division of Oil, Gas, and Mining

- State of Utah
- Department of Natural Resources

**Electronic Permitting System - Sundry Notices** 

### Request for Permit Extension Validation Well Number 43047549630000

API: 43047549630000 Well Name: NBU 921-29B4CS

Location: 1619 FNL 2069 FEL QTR SWNE SEC 29 TWNP 090S RNG 210E MER S

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Date Original Permit Issued: 12/17/2014

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision. Following is a checklist of some items related to the application, which should be verified.

• · · · · · · · · · · · · · · · · · · ·	o a oncomior or come in	one related to the approachen, which chedia be verified.
	cated on private land, h No	as the ownership changed, if so, has the surface agreement been updated? 🔵
	e any wells been drilled irements for this locati	in the vicinity of the proposed well which would affect the spacing or siting on?  Yes  No
	there been any unit or losed well? ( Yes (	other agreements put in place that could affect the permitting or operation of t  No
	e there been any chang losed location?	es to the access route including ownership, or rightof- way, which could affect es  No
• Has	the approved source of	water for drilling changed? 🔘 Yes 📵 No
		al changes to the surface location or access route which will require a change i sed at the onsite evaluation? 🔵 Yes 🌘 No
• Is bo	onding still in place, wh	ich covers this proposed well? 🌘 Yes 🔘 No
nature:	Joel Malefyt	<b>Date</b> : 11/3/2016

Sig

Title: Regualtory Analyst Representing: KERR-MCGEE OIL & GAS ONSHORE, L.P.